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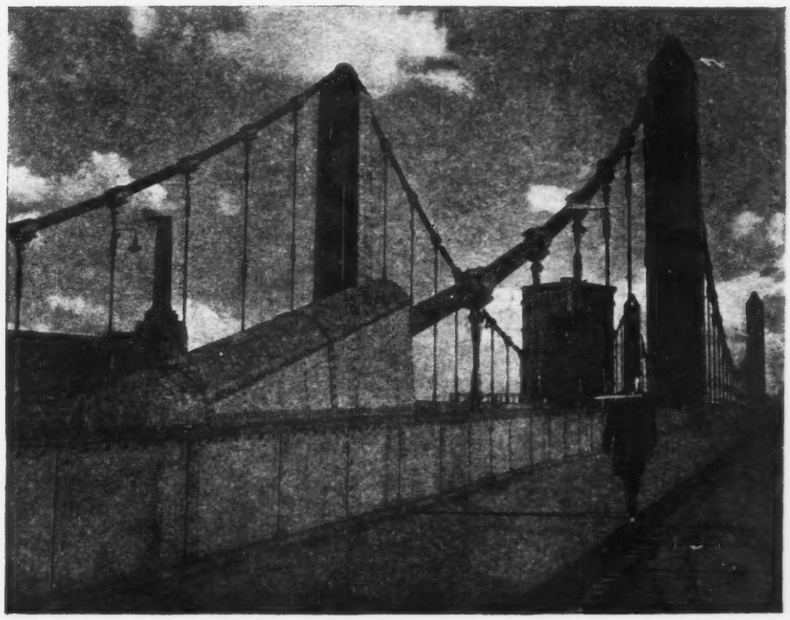
A Magazine of Architecture & Decoration



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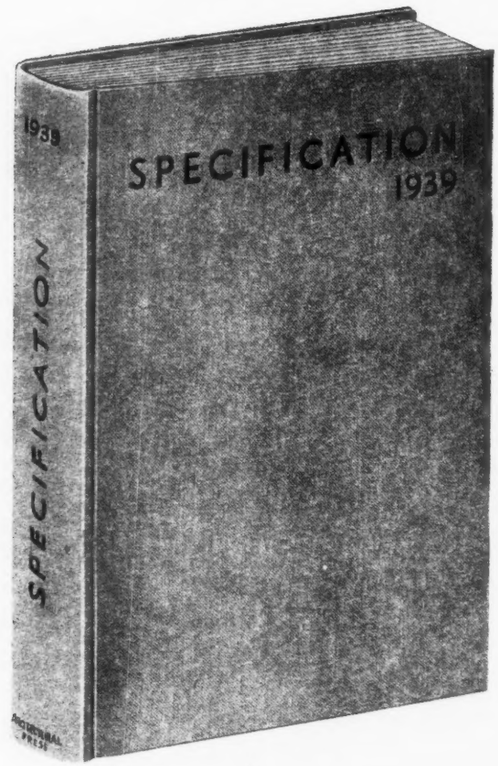

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What "Building" says:

This book is now almost a library in itself. It grows bigger every year, until now it is nearly a thousand large pages, and it is amazing value for half-a-guinea. Indeed, Mr. Yorke this year seems to have made more additions and alterations than usual. Diagrams and tables largely take the place of articles and descriptive notes. The Specification clauses have been revised and extended and the trade divisions have been brought up to date. SPECIFICATION . . . . should be in the office of every architect and builder.

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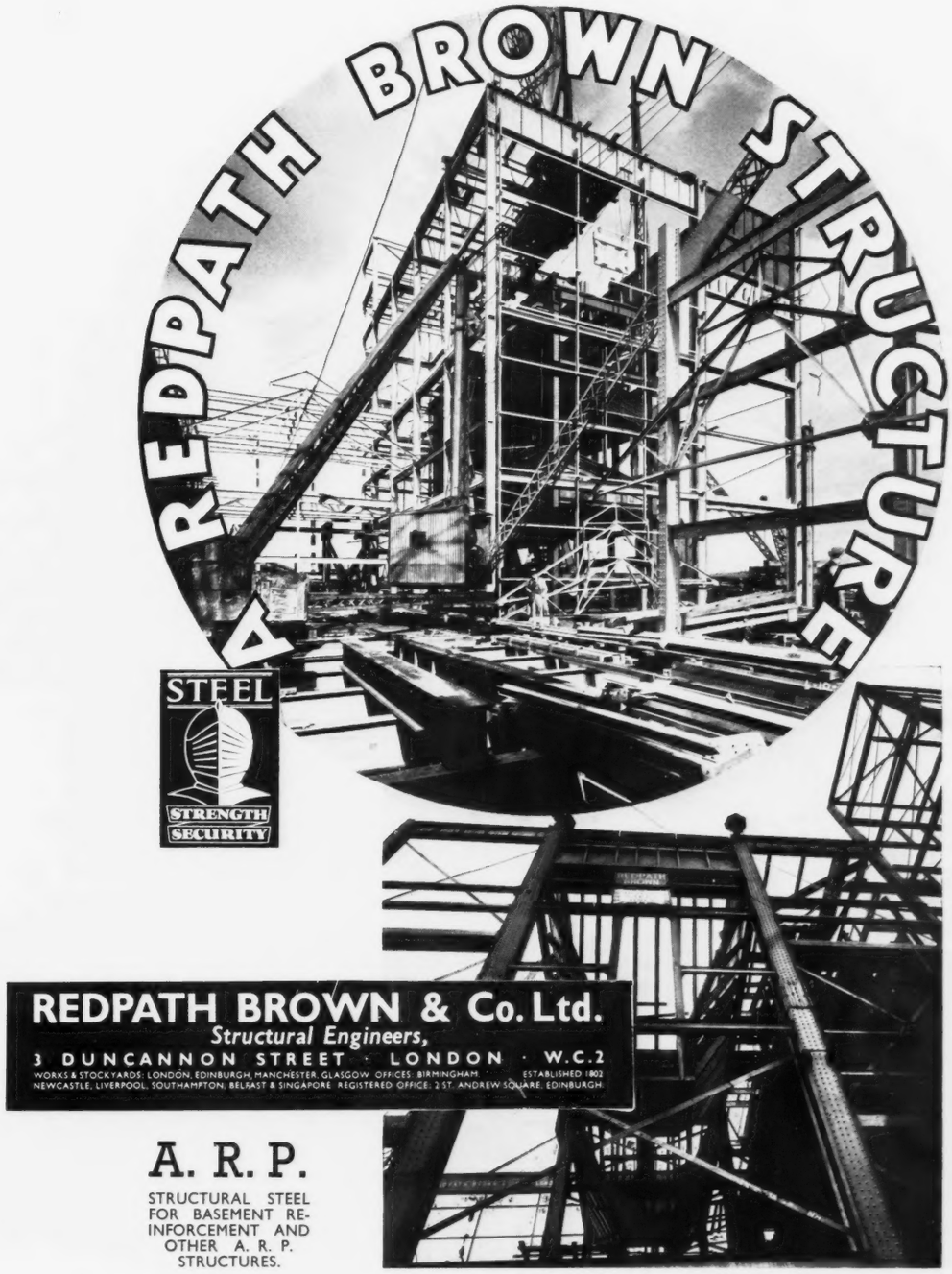

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THE
ARCHITECTURAL REVIEW
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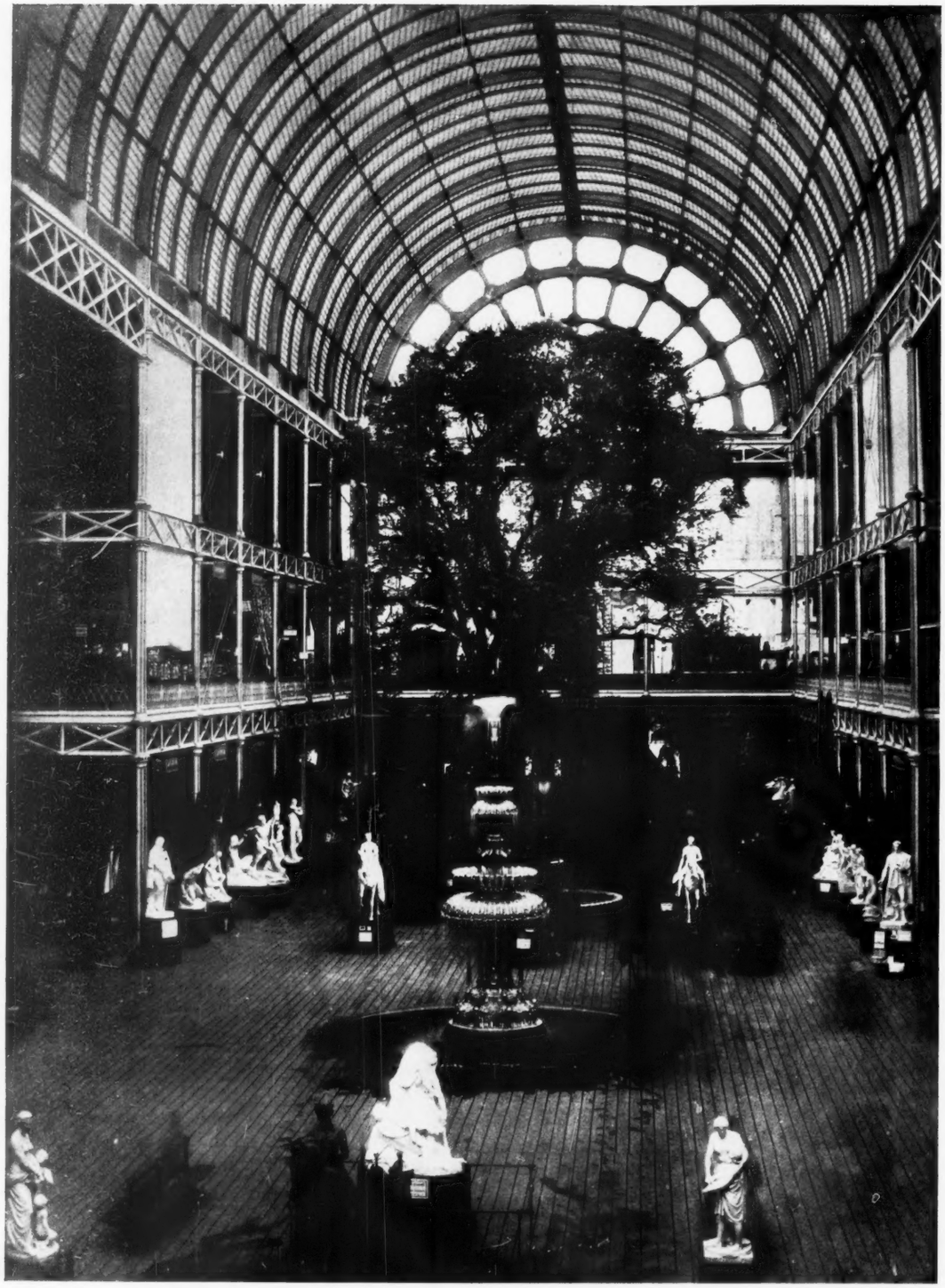


THE CRYSTAL PALACE ELM

The many articles that have been written about the Great Exhibition in Hyde Park, since the establishment of the building's fame as a pioneer of modern architecture, have been illustrated only by engravings and drawings. Photography had been in existence, however, a dozen years before 1851, and now there has come to light what many people guessed must be in existence: a series of photographs of the Great Exhibition building, as it stood in Hyde Park in 1851. One of them is reproduced here and others are reproduced on pages 299 and 300 of this issue, together with an article on their origin. The original prints are now in the Library of the Victoria and Albert Museum, by whose courtesy they are reproduced. Above is a view looking along the Great Transept, showing the famous elm-tree, which was enclosed within the building without harm for the period of the Exhibition.

UNIV. OF MICH.

"It is estimated that, after defraying the expenses of the Exhibition, the Royal Commission will be left with a surplus of from 150,000*l.* to 200,000*l.* The question arises: What is to be done with this surplus?

Schemes abound for its application, and a great movement is being made to get it expended upon the purchase and maintenance of the Crystal Palace as a Winter Garden.

It becomes necessary for the Royal Commission to mature some plan for itself on a careful and conscientious consideration of its position, powers and duties, in order not to find itself at the end of its important labours driven into execution of ill-digested projects by the force of accident or popular agitation.

In order to arrive at a sound opinion on what is to be done, we must ask ourselves: What are the objects the Exhibition had in view, how far these objects have been realized, and how far they can be further promoted?

I take the objects to have been: the promotion of every branch of human industry by means of the comparison of their processes and results as carried on and obtained by all the nations towards each other by the practical illustration of the advantages which may be derived by each from the labours and achievements of the others.

Only in a close adherence to this governing idea, and in a consistent carrying out of what has been hitherto done, can we find a safe guide for future plans.

But even if this were not the case, it will be found that by former announcements to the public, we have distinctly pledged ourselves to expend any surplus which may accrue towards the establishment of future Exhibitions or objects strictly in connection with the present Exhibition.

The purchase of the Crystal Palace for the purpose of establishing a Winter Garden, or a Museum of Antiquities, or a public promenade, ride, lounging place, etc., etc., has, in my opinion, no connection whatever with the objects of the Exhibition. Our connection with the building has been an incidental one, namely, as a covering to our collection, and ceases with the dispersion of that collection; and, therefore, even if we were not bound by legal contracts to remove the building on a specified day, and the dictates of good faith did not induce us strictly to fulfil our moral engagements towards the public, even although released from our legal engagements, I consider that we have not the power to divert any part of the surplus towards providing, the London, or even the British, public with a place of recreation.

But, should the public wish to maintain the building, we ought not to stand in the way of the Government keeping it up to the 1st of May, should they feel it their duty to take such a course.

If I am asked, what I would do with the surplus, I would propose the following scheme:—

I am assured, that from twenty-five to thirty acres of ground nearly opposite the Crystal Palace, on the other side of the Kensington Road, called Kensington Gore (including Soyer's Symposium), are to be purchased at this moment for about 50,000*l.* I would buy that ground, and place on it four Institutions, corresponding to the four great sections of the Exhibition —Raw Materials, Machinery, Manufactures, and Plastic Art.

I would devote these Institutions to the furtherance of the industrial pursuits of all nations in these four divisions.

If I examine what are the means by which improvement and progress can be obtained in any branch of human knowledge, I find them to consist of four: (1) Personal study from books; (2) Oral communication of knowledge by those who possess it to those who wish to acquire it; (3) Acquisition of knowledge by ocular observation, comparison and demonstration; (4) Exchange of ideas by personal discussion.

Hence I would provide each of these Institutions with the means of forming (1) a library and rooms for study; (2) lecture rooms; (3) an acre of glass covering for the purposes of exhibition; and (4) rooms for conversazioni, discussions and commercial meetings. The surplus space might be laid out as gardens for public enjoyment, and so as to admit of the future erection of public monuments there, according to a well-arranged plan. The centre might be applicable for a public conservatory, if wished for.

The Institution for the Raw Material would be most usefully subdivided into Metallurgy, Metallurgical Chemistry, and Animal and Vegetable (Agricultural Chemistry, Microscopy).

That of Machinery would embrace the whole branch of Polytechnic Science with its subdivisions.

That of Manufactures would comprise a School of Design and Chemistry, as applied to Manufactures.

The fourth (the Plastic Art), Architecture, Antiquities, Sculpture.

Now I find, that for all these separate pursuits, we have a variety of public Societies in England struggling for existence, unconnected with each other, unprovided with any suitable locations; the Geological Society; Botanical Society, Linnaean Society, Zoological Society, Microscopical Society, Agricultural Society, etc., etc., Polytechnic Society, Society of Civil Engineers, the Society of Arts, Manufacture, and Commerce (from which the Exhibition has sprung, and which, after having produced its flower, will have exhausted its vital power, and cannot return to what it was before), the Society of Architects, of Antiquaries, Archæological, etc.

Could not these Societies, or most of them, containing as they do all that this country possesses of talent and experience in these branches, be united in these Institutions, reserving to each its individuality, and its self-supporting and self-managing character, but bringing them under a general system, and so far asking them to reform their Charters as to make them more popular Institutions—I mean thereby Institutions placed in a relation of reciprocal influence with public opinion?

If these Societies were to sell their present habitations and property, and thereby were freed from the heaviest part of their expenses, they would be enabled materially to assist the first establishment of their new existence.

In order to secure a certain uniformity of system amongst them, they might, in all matters of interest common to them, be governed by a Central Committee of their Chairmen. To this central body might be added the Statistical Society, in order to obtain for the civilized world an accurate collection of the materials, from which alone those general laws can be abstracted, guided by which we can hope safely to advance in all branches of civilization.

These Institutions must be open and common to all nations, and would soon spread their ramifications into all countries. As the surplus with which they are to be formed has been obtained from the public, attracted and gratified by the sight of the works which the Exhibitors have at great expense, trouble and risk to themselves sent to the Crystal Palace, it would be but a proper return, and, I am afraid, the only one we could offer, to receive them as the first Life Members of the Institution.

By a scheme like this we should ensure that the Great Exhibition of 1851 should not become a transitory event of mere temporary interest, but that its objects would be perpetuated, that the different industrial pursuits of mankind, arts, and science, should not again relapse into a state of comparative isolation from each other, in which their progress is necessarily retarded, and that the different nations would remain in that immediate relation of mutual assistance, by which these pursuits are incalculably advanced, and their goodwill towards each other permanently fortified.

I may mention as a circumstance which may give additional importance to the consideration of such a scheme, that the locality I have mentioned is one which has been recommended also as an eligible site for a new National Gallery, and that the purchase of the whole, and the re-sale to the Government of as much as might be required for this purpose, might cause a considerable saving to the Exchequer, and, instead of absorbing it, might furnish additional open space to the metropolis, whilst it could assist the study of art in connection with manufacture.

I am perfectly aware that this is but a very crude scheme, requiring mature consideration and practical tests in its details; but I thought it my duty towards the Commission to lay it before them at as early a moment as possible, in order that the remaining weeks of the Exhibition might be employed in investigating it, or that we might be led by that investigation to the discovery of a more feasible plan."

ALBERT. Osborne, 10th August, 1851.

The VICTORIA & ALBERT Museum

MR. S. F. Markham's recent report on museums is of special interest. A museum is not merely a building full of objects, but an influence upon public life as a whole, and upon students in particular. The case of the Victoria and Albert Museum is, therefore, worthy of consideration, for it is by common consent the *National* Art Museum.

Its beginning lies in the somewhat involved origins of the museum movement as a whole. The British Museum was brought into being in 1759 by the doubtful instrument of a lottery, generally held to have been rigged. The poet Gray comments upon its wonders, including sharks with one ear and spiders as big as geese. By foundation statute, it was devoted to "the learned and the studious," which later gave Cobbett the opportunity of asking why tradesmen and farmers should pay for the amusement of a minor section of the population. But that the natural history collections were popular was clear from the beginning, and they became increasingly so in the age of Hugh Miller and Ann Pratt. This bias of public interest forced into being a Royal Commission, for the museum had already outgrown its space, and inter-departmental rivalry was acute. So the natural history collections came to be transferred to South Kensington, and the humanities left in Bloomsbury solitude. Meanwhile, other ideas were stirring. The financial success of Nollekins was followed by the triumph of Landseer. Modern art was coming into its own.

In 1831, perhaps as an echo of Cobbett's gibes, schools of design "for artisans" were created under the Board of Trade, and were empowered to purchase objects for teaching

purposes. The intention seems to have been to enable British craftsmanship to challenge the French monopoly of "designed" goods. The success of the schools was not great, but Albert the Good altered the case entirely with his Great Exhibition. For not only had the exhibition paid but it suggested the idea of permanent collections on a large scale as a practical, business-like proposition—it is noteworthy that its full title was "The Great Exhibition of the Works of Industry of all Nations." Selected objects, then, were housed in five rooms at Marlborough House, and so came into being the new national museum, under the direction of Henry Cole, and under the control of the newly instituted Department of Practical Art. In 1856, pressure of space forced a move. At the cost of £10,000, the museum was removed to Kensington where the Commissioners of the Exhibition found a site for it, conveniently next door to the National Art Training School. So came into being the building which was to be known as the Brompton Boilers. Henceforward the museum continued to swell—Fowke, Sykes, Moody, Redgrave and other architects adding to it the works of their hands.

All this was under the control of the Science and Art Department, both Science and Art being obviously included in the "industry of all nations." On the department's decease and the creation of the Board of Education, Art was divorced from Science, and in 1899 the foundation stone of the Victoria and Albert Museum was laid. In 1909, the new building, designed by Aston Webb, was completed, and the museum became what it now is, though on its flanks, the neo-classical concrete of the recent Geological and Science blocks have risen to challenge the Victorian-Byzantine-Baroque of the old Huxley building.

All this architecture exists for better or for worse. Meanwhile, behind the sweep of its well-known façade, the contents of the museum has grown in richness and variety. But a building and a catalogue do not make a museum, if by a museum is meant a living thing. To be of any social moment the museum and its contents must interest, or the public will pass it by. It must be taken for granted that all public institutions exist for a public purpose. What, then, is the purpose of this great pile, and of its valuable contents? What policy governs its development?

The Marlborough House collections were officially described as a Museum of Ornamental Arts. It was brought into being as a necessary tool for art-teaching, copying being prominent in the curriculum of those days. The British Museum dealt with the antique and the foreign; the Art Museum was to be contemporary and native. That this policy persisted is witnessed to by the official account of the history and purposes of the museum in the old "General Guide to the Collections" which, however, has not been republished since 1914. Since the primary object of the founders was to provide models for, and otherwise to aid the improvement of such manufactures and crafts as are associated with decorative design, the collections were classified "by industries," under the departments of Architecture and Sculpture; Ceramics, Glass and Enamels; Engraving, Illustration and Design; Library and Book-production; Metalwork; Paintings; Textiles; and Woodwork, Furniture and Leatherwork. At the same time, technical, historical, and local grouping was allowed for, in order to render the collections intelligible and useful to students.

The division into the above-named departments survives to this day. In the current short guide, the original official policy is said to have been two-fold: "to illustrate periods of artistic achievement, and to promote the application of art to manufactures." Whatever these phrases may mean, and they are far from clear, it is a fact that the Victoria and Albert Museum is no longer a museum of modern art. Except in such departments as Engraving, Illustration and Design and Book-production, modern art, or even 19th century art, is wholly missing. Modern sculpture and painting are, of course, covered by the Tate Gallery. Victorian art is relegated to the museum's annex in Bethnal Green. A time-limit has, it is obvious, been put to the periods of achievement which the museum is willing to illustrate. The history of art, however, continues in spite of official neglect. The present state of the museum makes evident an even stranger departure from the original intention of the founders of the museum. Whereas the Chinese collections of the various departments have recently been brought together in one room, nowhere in the museum can be seen such a survey of English art. The recent Royal Commission on Museums commented upon this striking omission, but the want is still evident. The traditions of art and of architecture, are in the keeping of the students. It is strange, indeed, that official policy, or want of it, should deprive them of a consecutive survey of English art upon which to found their practice. This is a matter of education. Surely the Board of Education, who control the museum, are not averse to its being used to educational ends? It has been held that the museum-mind is intrinsically in opposition to the creative, that its inclinations are to serve the collector and his minions, the dealers, rather than the artist. But the policy of a public institution is a public matter. The Board of Education appoints a standing Advisory Council for the museum. It is responsible to the public that this council should so be constituted that it is willing and able to modify or develop the museum's methods to the greatest advantage of the public. There can be no possible reply to the plain statement that English students of art should be provided with a panorama *of* English Art, in which term is included architecture, decoration, etc., up to the present day, and that the Victoria and Albert Museum, the national Art Museum, does not provide it.

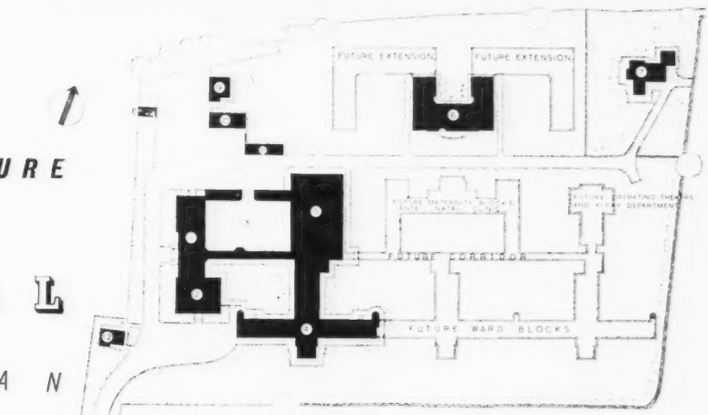
It is easy to excuse museum officials as scholars out of touch with the realities of today. But the failure to see the history of art as a living whole, which does not cease at a certain date—with the accent on the *living*—is a failure in scholarship. Instead of the objective survey, carefully classified and arranged organically, so as to link together the parts of the whole, the Victoria and Albert Museum prefers to cater for the "expert" by providing him with a selected masterpiece each week, to be viewed in isolation. Only in the department of Woodwork is there evident any consciousness of the need of displaying art as a whole. Yet the newly-arranged period rooms and the chronological groups of furniture are as attractive as they are distinctive. They point the way to a better museum, closer to the intentions of its founders, and nearer the heart of the public. The museum as it stands, with its multifarious departments and their wealth of objects, ranged in never-ending series, is very largely unintelligible to all those, including artists, who wish to study works of art, architecture, decoration. Apart from the present state of the museum displays, and its neglect of English art, the museum's obliquity is its rejection of public interest by failing to show how things are made. Its Art historian's preoccupation has blinded it to the fact that it exists by public support and has a public function. It is its business to interest as many human beings as possible. If the Board of Education should ever be induced to galvanize inertia, the art historians can rest assured that an intelligibly arranged museum need not be wanting in scholarship.

1

CURRENT ARCHITECTURE

HOSPITAL

C. G. STILLMAN



SITE PLAN

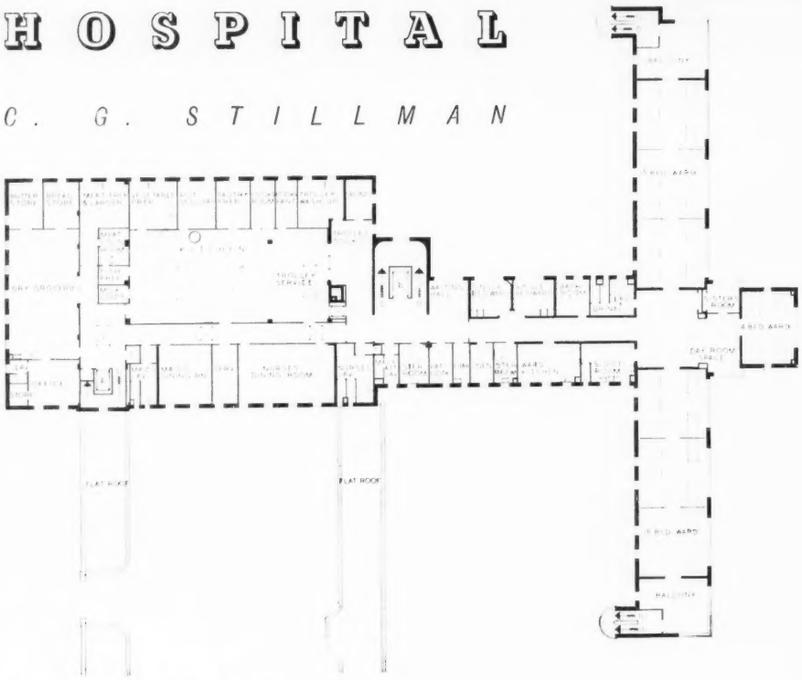
THE SITE is at Chichester, away from any main road and bounded on three sides by fields and on the fourth by allotments, thus ensuring a minimum of disturbance from outside noises, but it is conveniently placed within easy reach of the 'bus routes. In addition to allowing for two further ward block extensions, provision has been made for extending the nurses' home and for the inclusion of a maternity block and operating unit. A secondary entrance to the site is proposed to serve as a goods entrance, and land is available on the north side to meet this need. The purpose of the hospital is to relieve the pressure on Poor Law institutions in West Sussex.

1, general view of the main entrance front from the west.

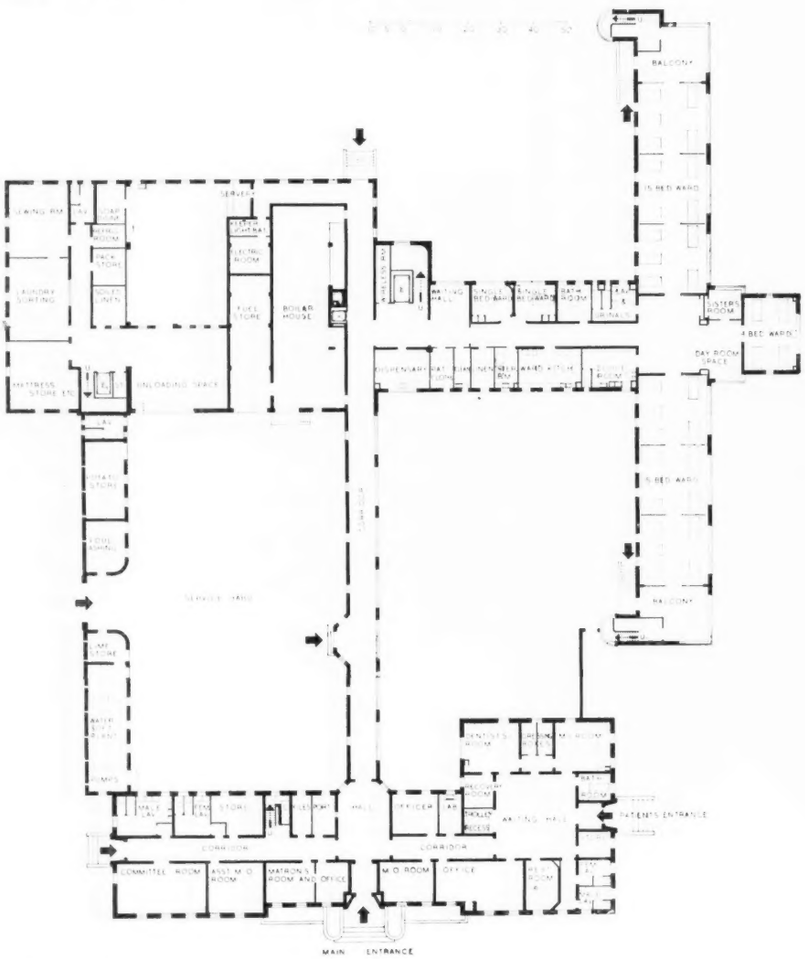
KEY TO SITE PLAN 1, administration block. 2, receiving block. 3, service yard. 4, ward block. 5, kitchen and engineering section. 6, nurses' home. 7, medical superintendent's house. 8, ambulance garage. 9, mortuary. 10, garages. 11, cycle store. 12, porter's lodge.

HOSPITAL

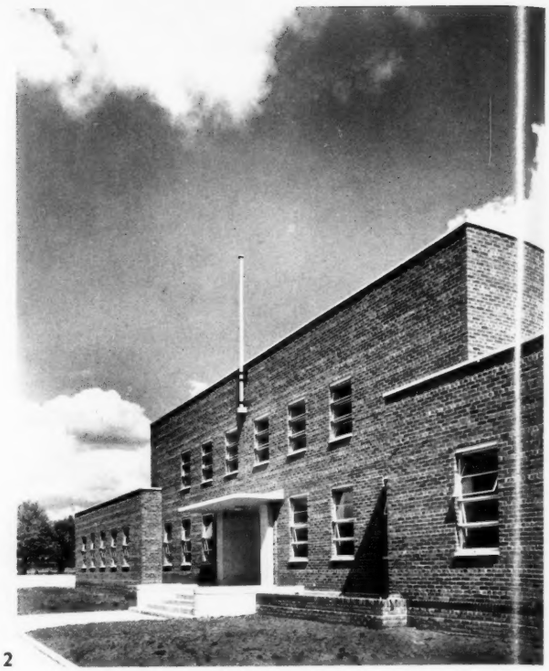
C. G. STILLMAN



FIRST FLOOR PLAN
WARD BLOCK



GROUND FLOOR PLAN
ADMINISTRATION AND WARD BLOCKS

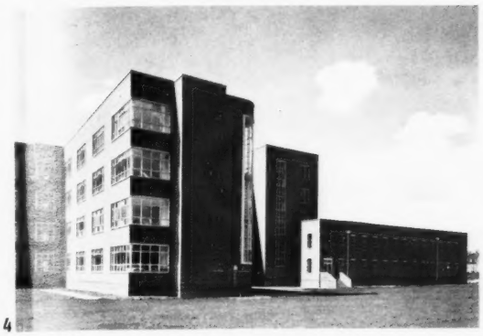


2

PLANNING The ward block, which is given a southerly aspect, is planned as a four-storeyed unit, the reason being to utilize the site to the maximum capacity and shorten travel of services from the kitchen, boiler house, etc. The present ward block gives accommodation for 144 beds, but the site layout has been arranged to permit of two further extensions each of 144 beds, giving a total accommodation of 432 beds. The engineering and kitchen block is a two-storeyed building with the boiler house and general storage on the ground floor, and kitchen and staff dining-rooms on the first floor, together with the necessary storage for provisions. The kitchen, boiler house and storage have been designed to give accommodation for additional equipment when extensions take place.

STRUCTURE AND EXTERNAL FINISHES The ward and kitchen block are reinforced concrete framed buildings, masked by brick facings, the administration block and nurses' home having 13½-inch cavity walls and reinforced concrete

3



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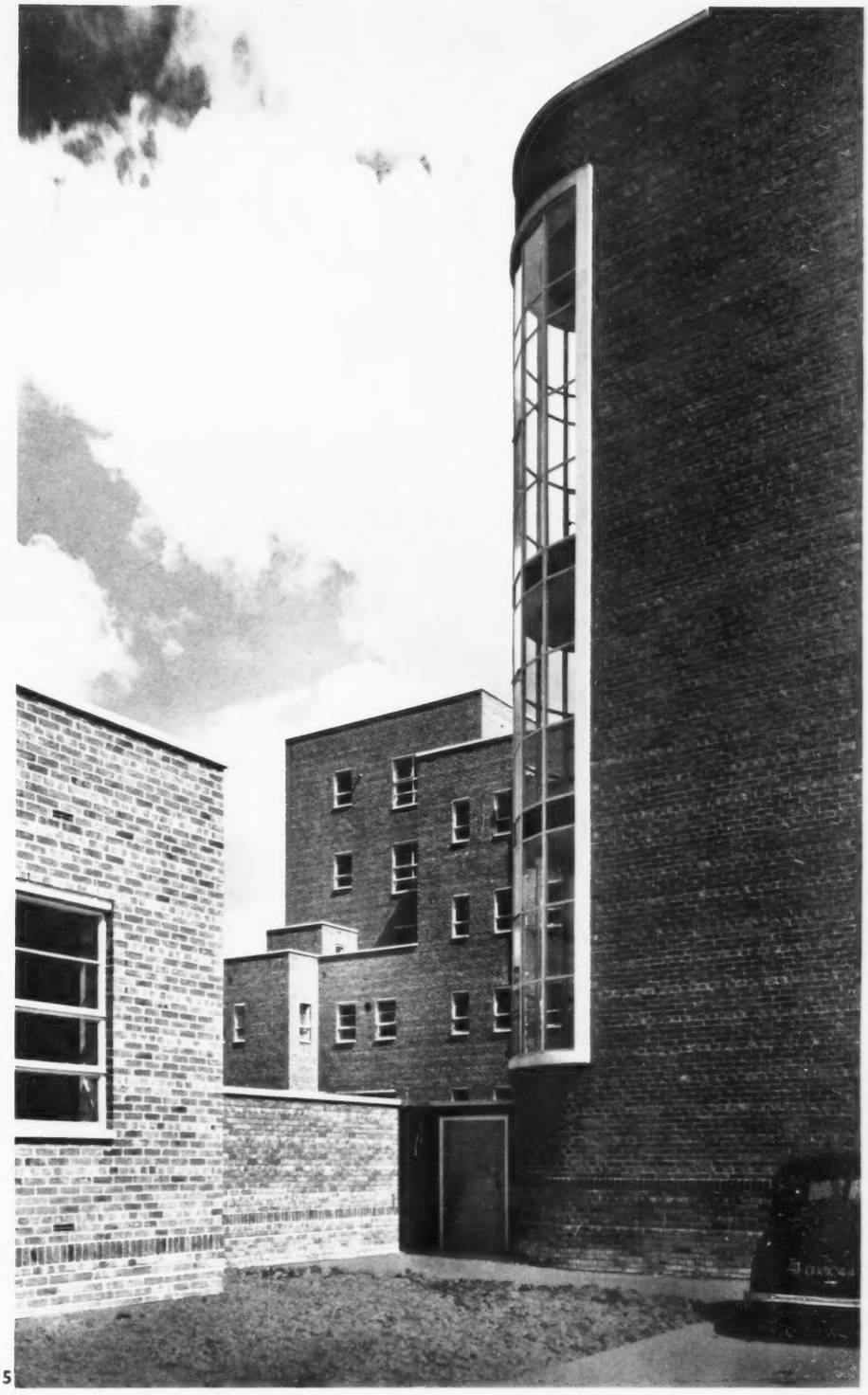


5

[continued from facing page]

floors. The whole of the buildings are constructed with flat roofs insulated with 1-inch cork, with 2-inches of cork to the ward block, and covered with asphalt on felting. Internal walls and partitions are of brick and breeze slabs. A satisfactory degree of sound proofing has been obtained by adopting a cavity wall construction with two 3-inch breeze partitions and a 2-inch cavity between. The reinforced concrete floors are freed from all beams on the underside by designing the floors as inverted tee beams, connected at the top with a thin reinforced concrete slab, the whole forming a hollow floor and adding to the sound-proofing of upper floors from lower. All windows are of metal.

2, new entrance to administration block. 3, ward block, with patients' entrance to administration block on the left. 4, end elevation of ward block with kitchen wing to the right. 5, detail of window to circular stair to ward block.

HOSPITAL

C. G. STILLMAN

6

INTERNAL FINISHES AND EQUIPMENT The interior decorative treatment to walls has been mainly carried out in painted surfaces, which together with the flooring material has been carefully considered to give a clean and bright colour scheme. The exceptions to this treatment are the introduction of wall tiling to the main entrance hall of the administration block, and the seamless cement glazing 6 feet, 6 inches high, forming a dado to all rooms with tiled floors. The floors to the ground floor rooms of the administration block, ward block and nurses' home, together with the ward kitchen on each floor, kitchen storage and all staircases are finished in patent wood-block flooring, the corridors and upper floors to these buildings being covered with a patent lino finish. The floors to the main kitchen lavatories, bathrooms and sterilizing rooms are finished in buff coloured tiles with close joints. The hospital is equipped with three lifts ; one passenger and bed lift, one goods lift, and one food service lift, the last communicating between the kitchen and all floors, and of a size suitable for carrying food trolleys to the ward kitchens on each floor, from which points the distribution of food takes place to the various wards. The kitchen block is fitted with mechanical ventilation plant, and cold stores, the equipment consisting of steam-heated and gas-heated units. A steam boiler is provided for generating the steam for the cooking, also the steam required by the sterilizing equipment. Sterilizing equipment is provided on each of the four floors, and consists of instrument, glove and bowl sterilizers. In addition, there is one dressings sterilizer and a water sterilizing unit, though on the first floor only. The lighting in the wards has been reduced to a minimum so far as general lighting is concerned, by the introduction of a special bed-head lighting unit, specially designed by the architect. The fitting is designed to serve three purposes ; principally, it acts as a bed-head light, and is supported in a bracket, so that it can be inverted to give indirect lighting. It can also be removed from the clip and withdrawn for use as a bed inspection lamp, and after use can be replaced in the clip, the cable being absorbed into a tube let into the brickwork. The introduction of this lamp has obviated the necessity of providing a switch plug at each bed for inspection purposes.

6, medical superintendent's house from the south, showing also one of the special lamp standards used in the grounds. 7, nurses' home from the south—and to the right of the medical superintendent's house ; the main entrance is on the right.

NURSES' HOME
FIRST FLOOR PLAN

7

NURSES' HOME
GROUND FLOOR PLAN

F L A T S

MICHAEL ROSENAUER

THE SITE The flats are part of the development of a large site fronted on the north by Kensington Road and bounded to the south and east by Ennismore Gardens. The scheme preserves the old Kingston House garden practically in its entirety, the north block overlooking Hyde Park. The south block on Ennismore Gardens, with the north block, represents about three-fifths of the scheme contemplated. The main entrance is from Kensington Road in a large forecourt from which the building terraces down to the gardens. A ramp leads from forecourt to main garage.

1

1, detail of one of the entrance halls. 2, general view of the north block showing the balcony and bay window treatment of the elevations, and the circular entrance hall in the forecourt to the right centre.

2

FLATS

MICHAEL ROSENAUER

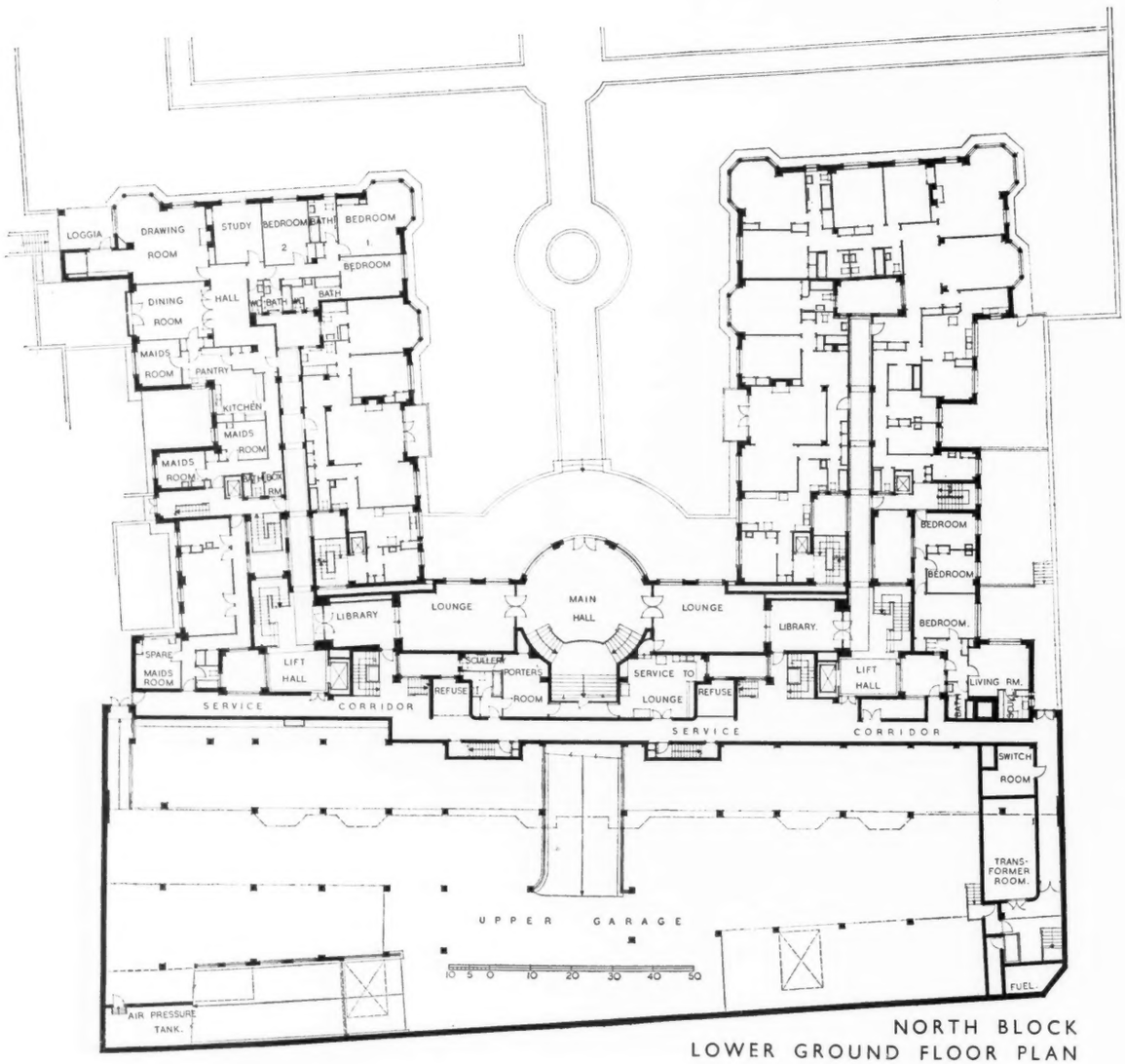
3

4

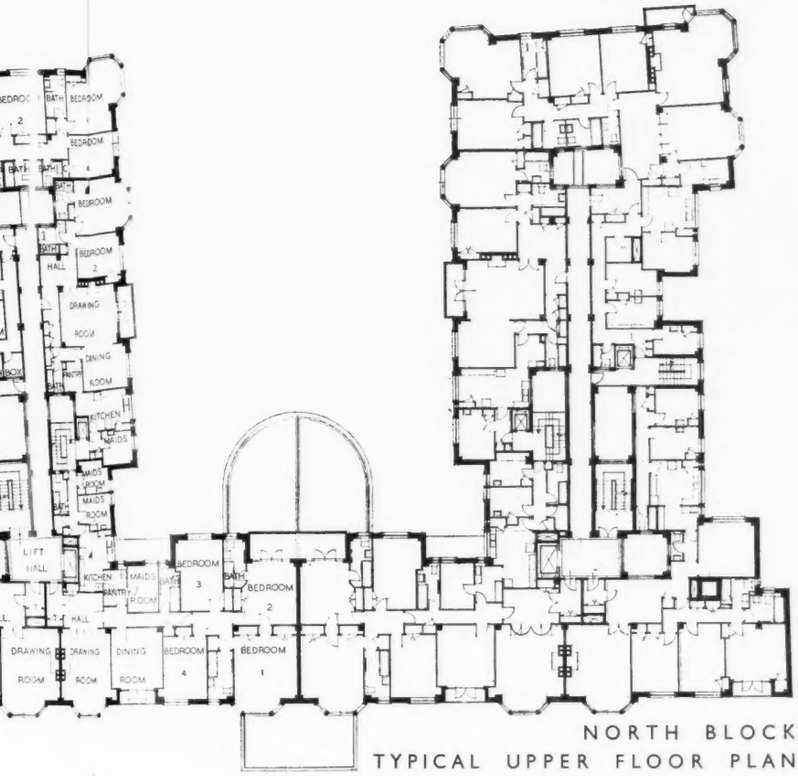
5

PLANNING adheres strictly to the principle of clearly separating the three elements of a flat, namely : reception rooms, principal bedrooms and service quarters. The services are unusually spacious, containing kitchen, pantry, servants' day room, bathroom and bedrooms. The main entrances to the flats are from central corridors opening off the main lift halls and staircases, giving four flats on each floor from one central access. The service quarters are reached from service staircases and lifts, in this way servants are separated entirely from the central corridor.

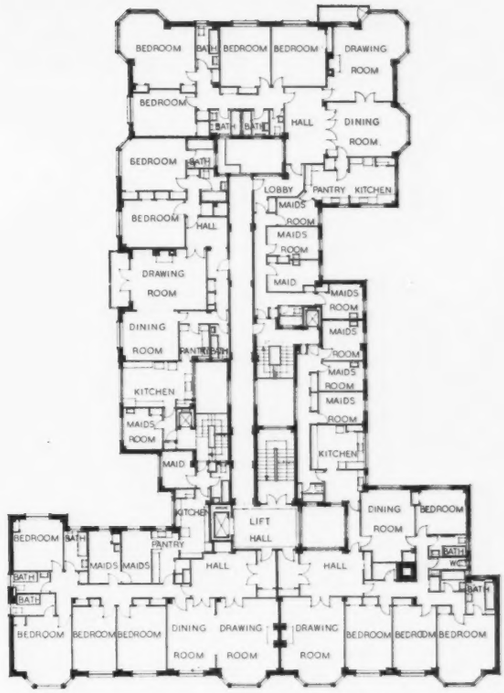
3 and 4, general views of the larger, north, block. 5, the north block with a detail of the south block, extreme right.



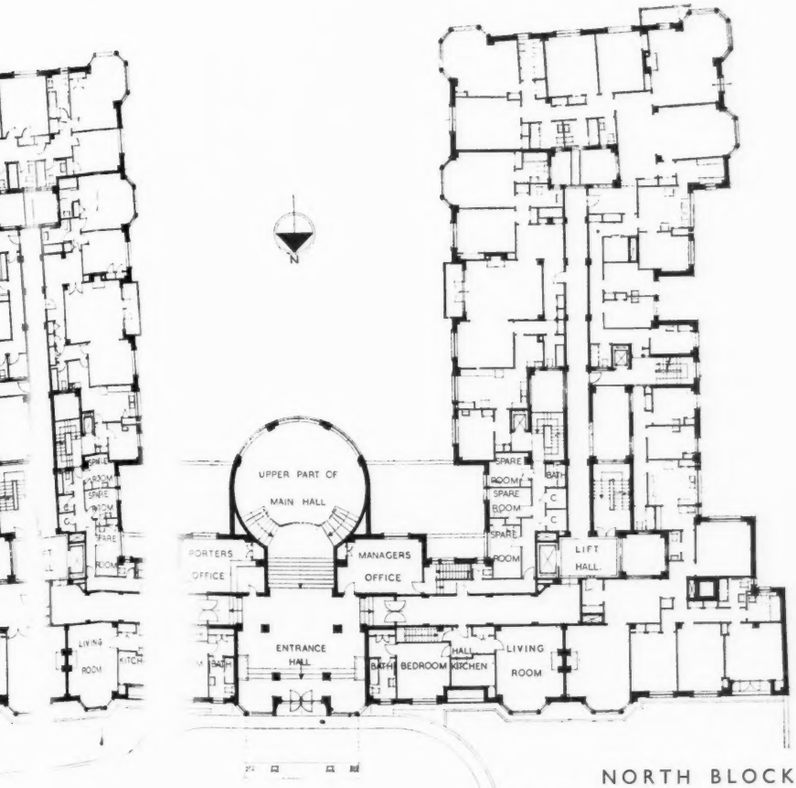
NORTH BLOCK
LOWER GROUND FLOOR PLAN



NORTH BLOCK
TYPICAL UPPER FLOOR PLAN

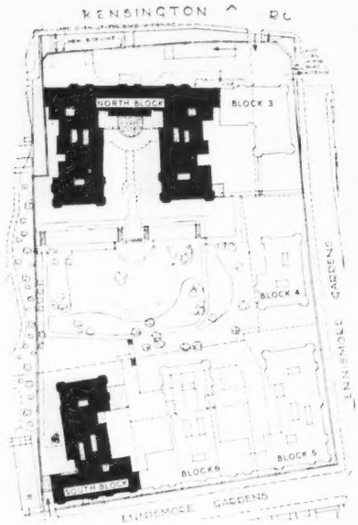


SOUTH BLOCK
TYPICAL UPPER FLOOR PLAN



NORTH BLOCK
GROUND FLOOR PLAN

SOUTH BLOCK
GROUND FLOOR PLAN



SITE PLAN

6

F L A T S

MICHAEL ROSENAUER

STRUCTURE AND FINISHES The construction is steel-framed on concrete foundations the elevations being in brown and red multi-coloured brick with artificial stone architraves to the windows. Bay windows on all elevations are a distinctive feature. Quite new is the arrangement of such corner bays on the garden wings. The stone mullions of these bays are very light, which constructionally has been achieved by cantilevering on each floor. A new feature also is large balconies, partly recessed, partly projecting, only their centre portion left open, with the corners screened for protection against wind.

6, a general view of the north block showing the cantilevered bay windows on garden elevations, with a balconies on the left.

C O T T A G E S

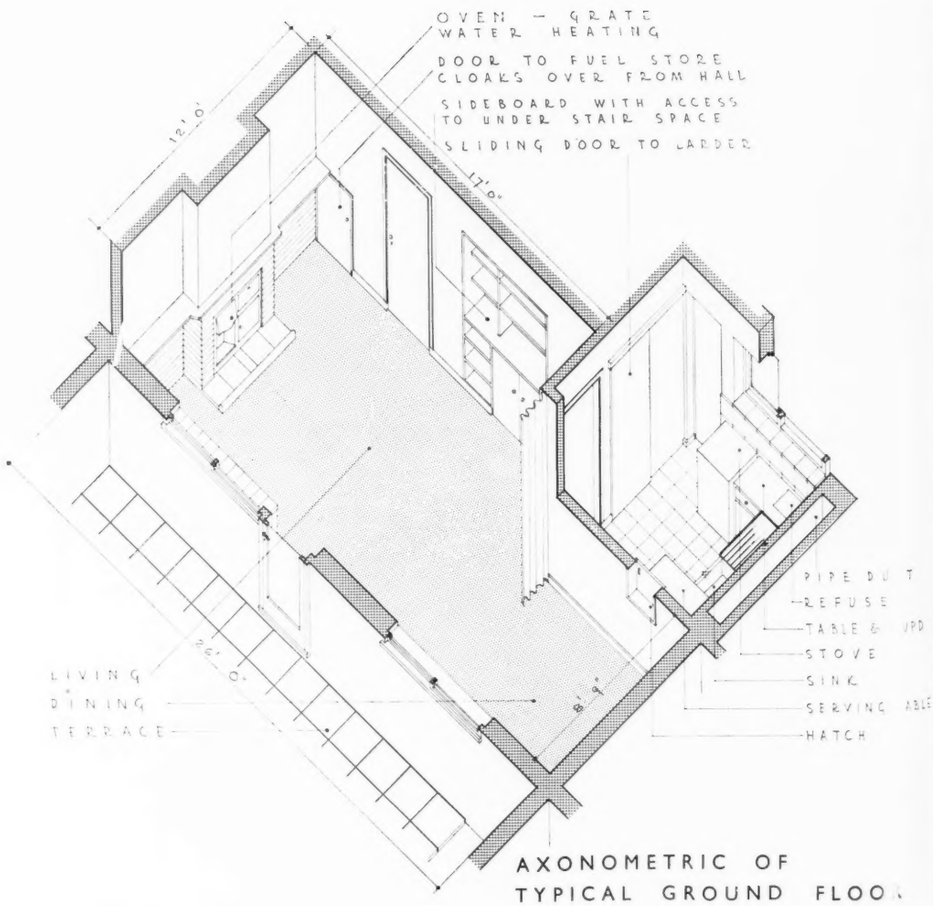
F. W. B. YORKE AND F. R. S. YORKE

THE SITE is at Stratford-on-Avon, on a narrow frontage with ground laid out as a communal lawn. Each cottage, for Flower's Brewery workers, has a small strip of garden cutting into the lawn giving, with the flank walls between the cottages, some privacy to the paved terrace. The garden will also enable creeping plants to grow up the flank walls and over the pergola. The main entrances and kitchen doors are placed on the north side so that no visitors pass the living-room windows.

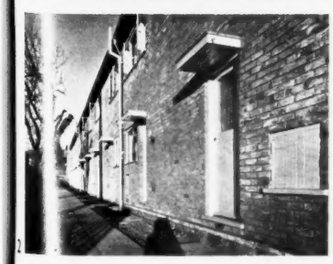
PLANNING The idea was to avoid having a best parlour that would not be in use, and also to avoid living in the kitchen. Consequently there is one large room, 26 feet by 12 feet, reducing at the dining recess to 9 feet wide. One of the essentials was plenty of cupboard space. There are fitted cupboards in the larder with ventilation, and built-in cupboards in the kitchen, a built-in dresser in the living-room, and under it a large storage space continuing under the staircase. The general heating in the living-room is from a combination grate which also does cooking and water heating. Secondary heating consists of a gas fire in the dining recess.

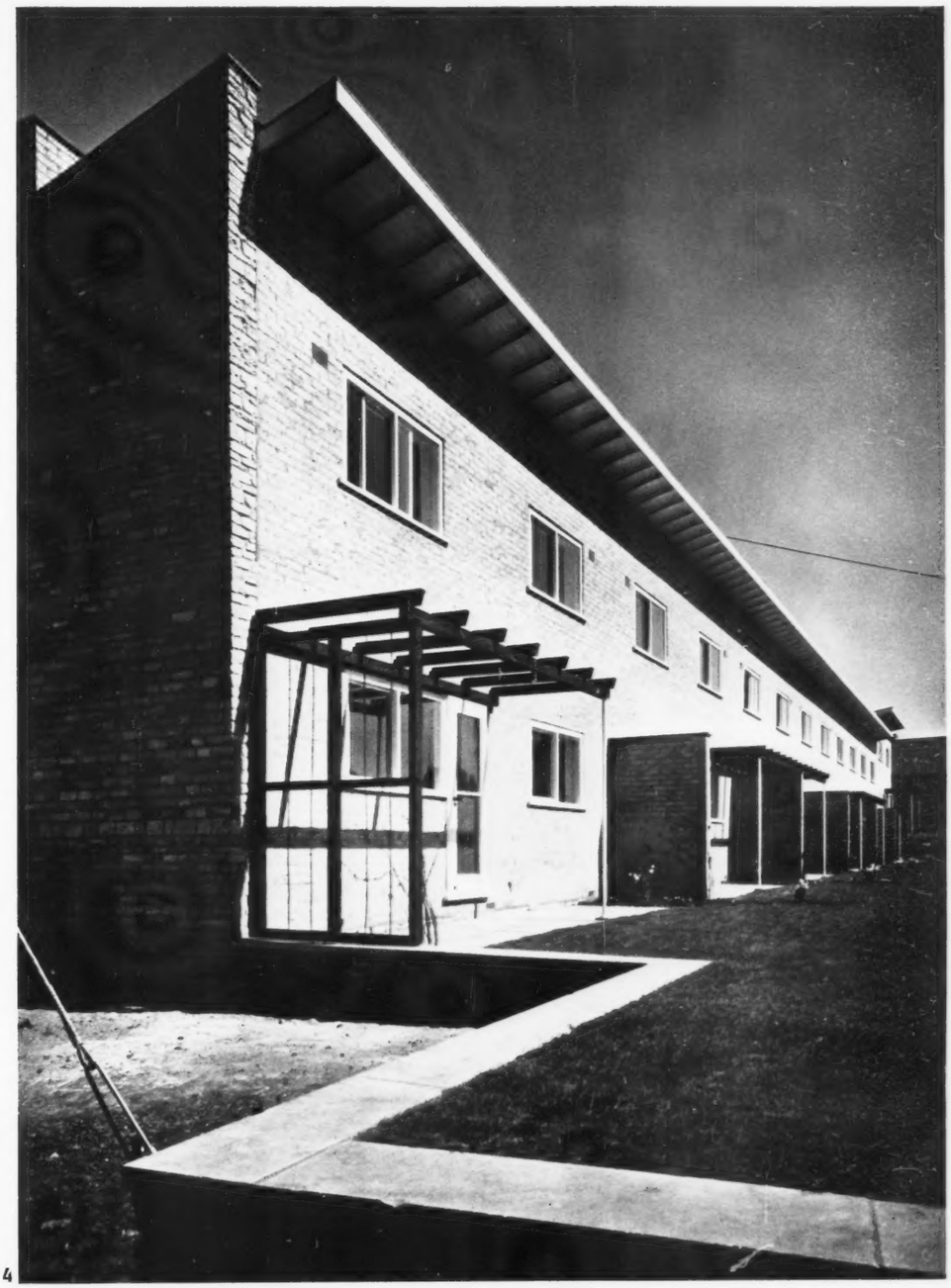
STRUCTURE AND EXTERNAL FINISHES Cavity walls, cream-coloured stock bricks, white paint externally, pergola being creosoted. The under side of roof soffit is painted white with under side of exposed rafters red. The roof is boarded and covered with corrugated asbestos cement sheeting. The end wall facing the road is built in local stone.

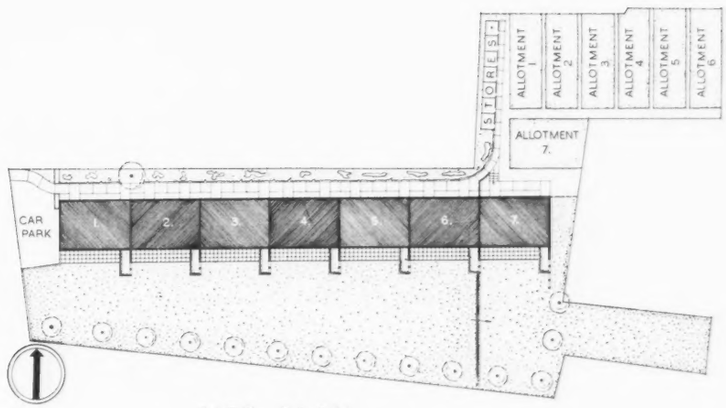
1, garden elevations. 2, rear elevations. 3, typical kitchen interior. 4, detail view of the garden façade.



AXONOMETRIC OF TYPICAL GROUND FLOOR






STORES
ALLOTMENT 1
ALLOTMENT 2
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ALLOTMENT 4
ALLOTMENT 5
ALLOTMENT 6
ALLOTMENT 7.
CAR PARK
1.
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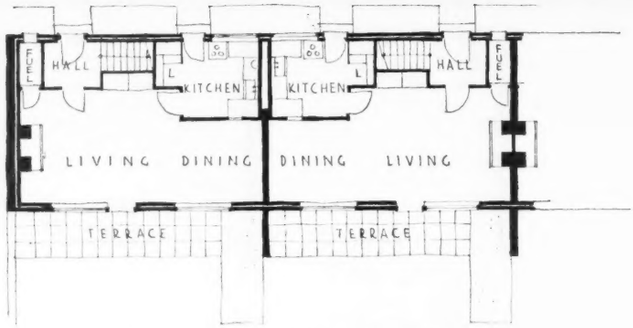
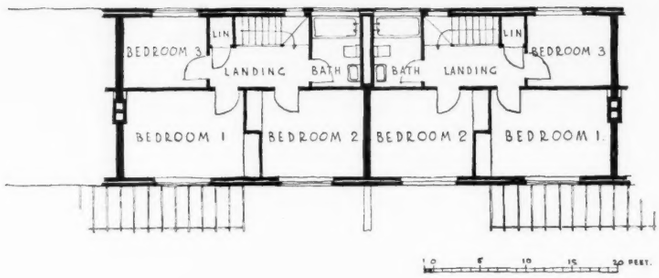
SITE PLAN

5

6



TYPICAL GROUND FLOOR PLAN



TYPICAL FIRST FLOOR PLAN

INTERNAL FINISHES AND EQUIPMENT Walls generally are plastered and distempered. Board floors are used throughout except in the kitchen and to the larder and hall, which are in buff quarry tiles. Ceilings in bedrooms are in compressed fibre board, and distempered fitted cupboards are provided to the two main bedrooms.

5 and 6, general views of the garden elevations, showing pergola treatment to living-rooms.

F. W. B. YORKE
AND F. R. S. YORKE

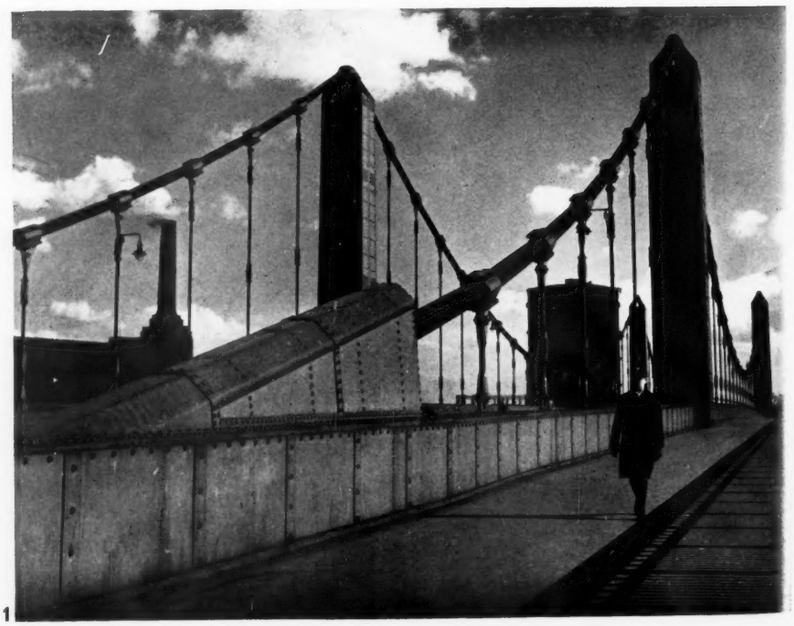
BRIDGE

G. TOPHAM FOREST
AND E. P. WHEELER

RENDEL, PALMER AND TRITTON, ENGINEERS

THE SITE AND PLANNING At Chelsea, London, the original suspension bridge, opened 1858, being replaced by a modern structure. As the existing land anchorages were inadequate and their replacement by others would have been expensive, the self-anchored type of bridge was adopted. In this type the cables are anchored to the ends of deep stiffening girders, which run from end to end of the bridge. The tension in the cables is mainly taken by the thrust in the stiffening girders, the only shore attachments required being vertical links subjected to minor loads. An unusual feature in the new bridge is the omission of the usual portals at each pair of towers, lateral support for the towers being, in this case, provided beneath the roadway.

1, general view showing the suspension cables and pylons.

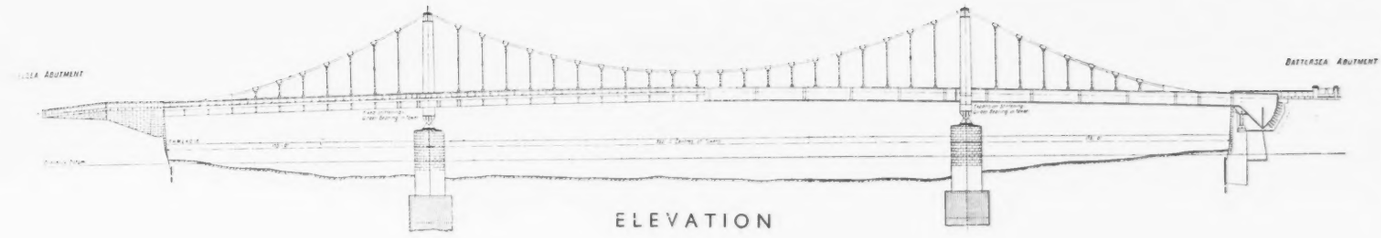


1

B R I D G E

G. TOPHAM FOREST
AND E. P. WHEELER

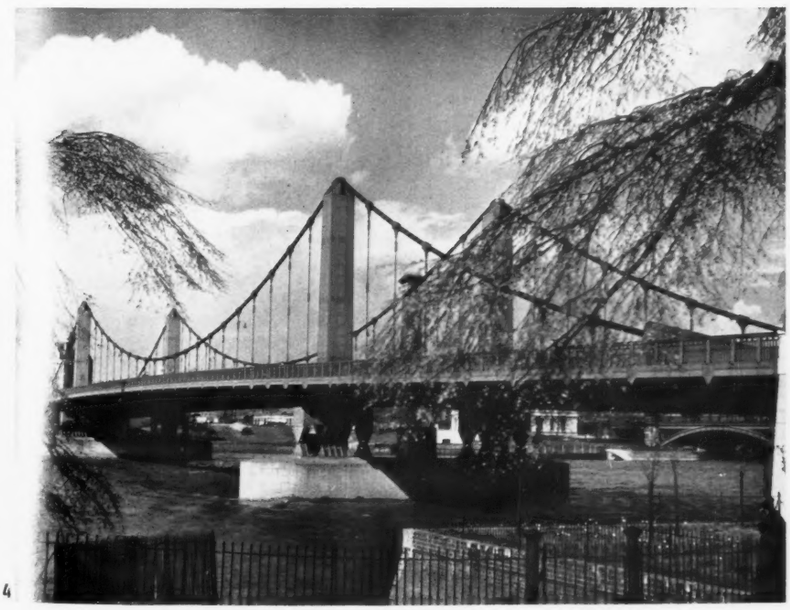
RENDEL, PALMER AND
TRITTON, ENGINEERS



ELEVATION

2

3



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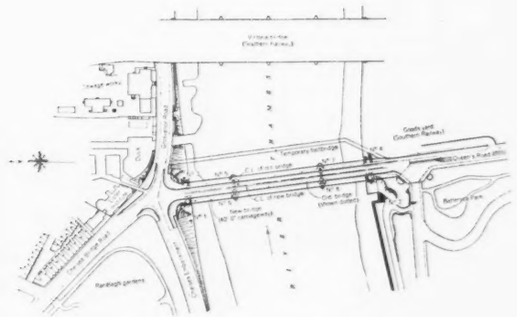


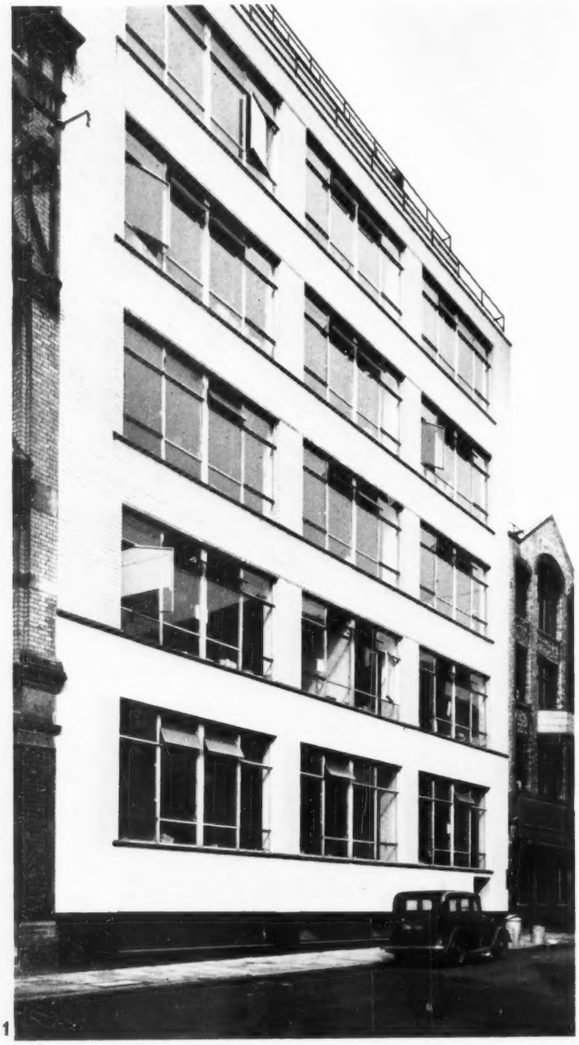
SITE PLAN

STRUCTURE In a suspension bridge of the self-anchored type, it is necessary to complete the stiffening girders before cable erection is commenced, and temporary supports to the stiffening girders are therefore required until their weight can be transferred to the cables. The side spans of the new bridge were sufficiently strong to carry their own weight between end bearings, but a temporary mid-support had to be provided for the centre span. In view of the requirements of river traffic, the flotation method of erection was adopted. The deck structure was conveniently divided into four sections, the two side spans and the two halves of the centre span. The erection berth was placed in the Battersea side channel. The Chelsea side-span, the north half of the centre span and the south half of the centre span were successively assembled and floated into position, and the Battersea side-span was then erected. All sections were temporarily supported on universal bearings for adjustment to line and level.

2, detail of a suspension brace. 3, one of the four steel supporting pylons. 4, a general view. 5, old Chelsea Bridge from a print.

5

OFFICES MESSRS. JOSEPH



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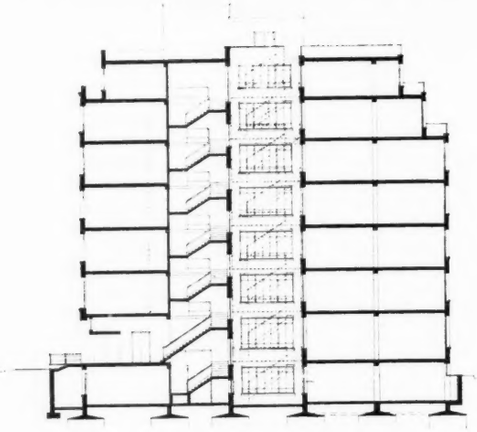
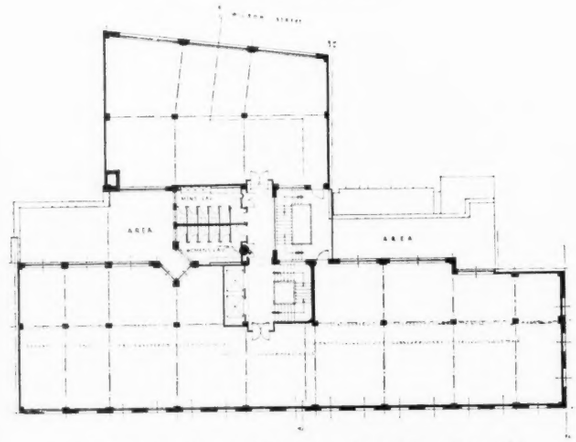
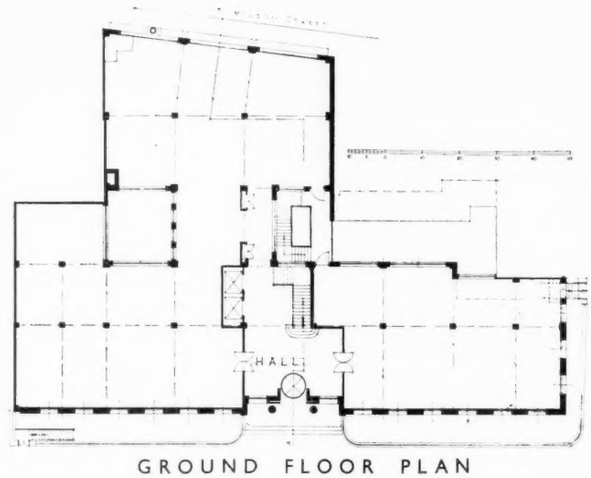


CROSS SECTION



TYPICAL UPPER FLOOR PLAN



GROUND FLOOR PLAN

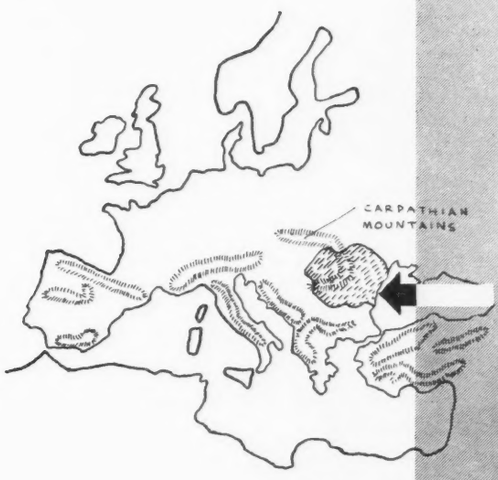
THE SITE AND PLANNING In Finsbury Square, London, the building is intended as an office block for letting. The general conditions controlling the plan were : convenience of sub-division to suit tenants' requirements of space and organization, and provision of maximum lighting.

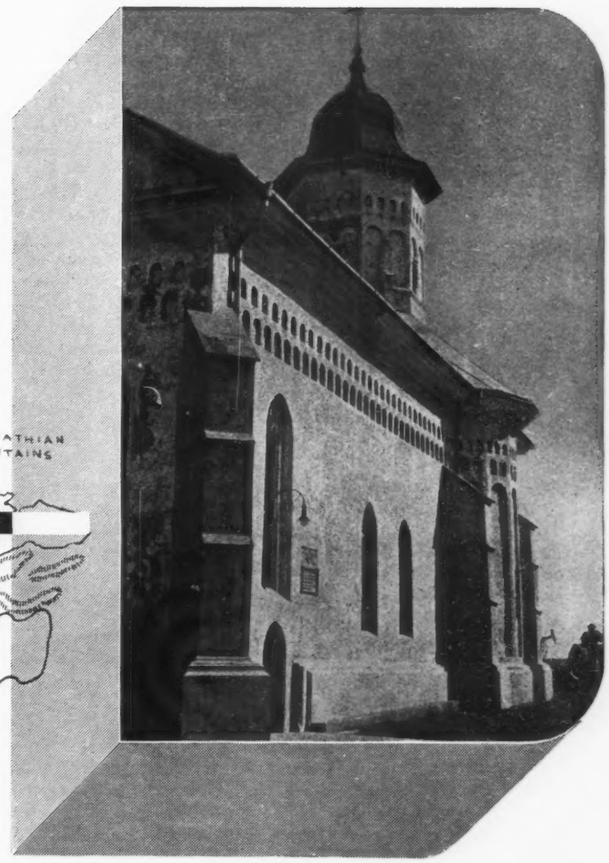
STRUCTURE AND EXTERNAL FINISHES Construction is in steel frame with solid reinforced concrete floors, external walls in brick, internal walls in patent block. The two main façades, to Finsbury Square and Sun Street, are faced with Portland stone, the rear elevation being in faience and internal courts in brick. Windows are metal centre-hinged casements.

INTERNAL FINISHES AND EQUIPMENT Staircase finishes are of glazed faience with terrazzo tiles and ebonite strips. Floors to offices are screeded ready for linoleum or other finish to tenants' requirements. Services include central heating, two lifts and postal chutes.

1, the façade to Wilson Street. 2, the main front on Finsbury Square. 3, the main entrance hall stair.

The seventeen churches of the valley of the Bucowina, which lies to the east of the Carpathian Mountains and is now part of Roumania, represent a unique tradition in ecclesiastical architecture, as they have painted frescoes covering nearly the whole of their exterior walls. Apart from the strange character this decoration gives to the buildings, the frescoes are of importance in view of the Byzantine origin of their motifs.





ROUMANIA

BYZANTINE FRESCOES IN THE BUCOWINA

By Donald Craik and Ruth Churchill

On the eastern side of the Carpathian Mountains, which run in a curve through Slovakia and Roumania, lies an area of about 4,000 square miles, that has been called throughout history the Bucowina, or the Beech wood. This land has been ruled in turn by Turks, Poles, Hungarians, Russians and Austrians. Nowadays it forms part of Moldavia, a principality of Roumania.

The Bucowina consists of the Carpathian Mountains on the west and a high undulating tableland on the east. The peasants are of many nationalities, and alternate between being small tenant farmers in the summer and wood haulers in the winter. Cernauți, the main town held in the east of the Austrian Empire a similar position to Prague in the west; it was the centre of industry and German propaganda, and had its own Diet and University. But today most of this culture and industry has disappeared, the town is dilapidated, and except for the fact that it is on the direct route from Bucarest to Warsaw, might well be forgotten. The other small towns, which lie within the boundaries, such as Radauți and Suceava are now no more than market towns, though once the seats of the ruling boyars. Yet there are 17 churches, hidden in these valleys, which are in their exteriors as well as their interiors, unique, being covered with frescoes on plaster. Some are monastic of the Orthodox church and are still being used by the monks; others are parish churches.

It is difficult to trace the history of the people who have lived here, since we have no records previous to the 12th century. According to Professor Parvan, the Scythians, the Cummerians and the Getae, the original inhabitants, "drove back Ionian invaders to the eastwards and Celts to the west and founded the greatest barbarian empire ever known in this part of Europe. The Getic kingdom of Burebista included Bohemia and western Hungary, as well as Bessarabia and Bulgaria, but the Transylvanian Carpathians remain the basis of its power." Their kings welcomed the Roman traders who settled within their lands, but the Empire did not become a Roman province until Trajan in A.D. 106 defeated them under their famous leader Decebalus. It is this victory which is recorded on the Trajan column at Rome.

About 150 years later the Romans withdrew

to the southern side of the Danube, leaving the country open to successive invasions from the east, starting with the Goths and followed by the Slavonic tribes, the Bulgars, who included it in their Empire, and lastly the Magyars. Very little is known of what were the effects on the country, since in 1241 Genghis Khan sent an invading Mongol army over the Caucasus and all historical records were completely destroyed.

When the Hungarians became Christian in A.D. 1000 under Stephen, it became necessary for the protection of the crusaders to fortify the Carpathian passes against the Turks. Later in 1349 the Voivode Bogdan, a Roumanian, rebelled against the Hungarians in Transylvania, and fled over the mountains to settle in Moldavia. He adopted the ox head and star as his coat of arms, and this motive is visible on many of the monasteries today.

The history of his successors is coloured throughout with intrigue and treachery, and the recurrent brutality of the Turks; they endeavoured to play off the Poles against the Hungarians, the Catholic against the Orthodox church, yet at the same time they remained the only buffer against the Moslem faith in Europe, now that the Serbian and Bulgarian Empires were on the decline.

There were however a few great kings, who succeeded in uniting forces, and holding the Turks at bay; and it was in these reigns that the monasteries became centres of learning within the fortified walls.

The first of these notable rulers was Alexander the Good, 1401–31, who was fortunate in having a competent leader at the same time in Walachia, Mircea the Old, who managed to combine Hungarian and Papal support with that of Poland, which was further insured by the marriage of Alexander to a relative of the Polish king. It was in this reign that many of the monasteries were founded. These were destroyed by the Turks, so that it was not until 20 years later when his grandson Stephen the Great, 1457–1504 had come to the throne, that the churches as we know them today were built.

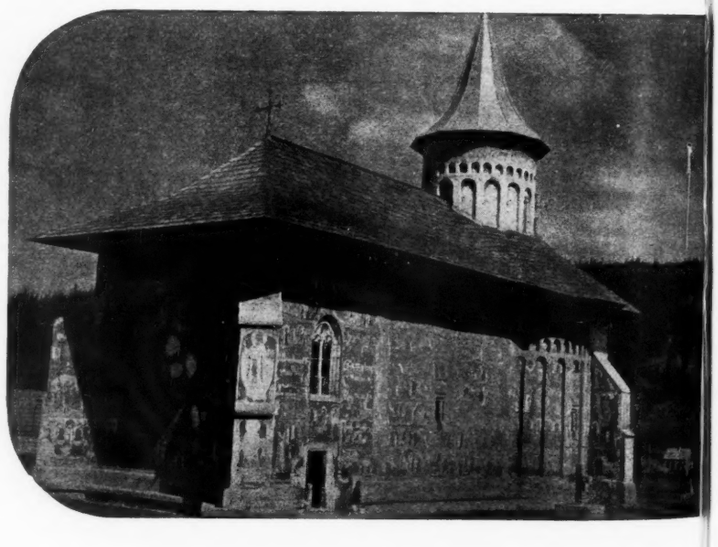
Stephen was an outstanding figure in Balkan history. Cruel, ruthless, a military genius, he was able to hold back the Turks and so dispense with interference from Poland and Hungary, neither of which Catholic countries liked to see the Orthodox church gaining ground.

Over 40 parish churches were built in stone and painted with frescoes, and it is from these that we deduce that the artists and craftsmen were able to work in peace without the protection of monastic walls.

The last monarch of any importance, Petru Rares, an illegitimate son of Stephen, reigned from 1527–46, and even for this part of Europe his perfidy seems to have been unique; yet his unstable management stands out as statesmanship in contrast to the degradation that followed. From now on the princes secured their nominations from the Turkish Sultan until after 1775, when the Bucowina became part of the Austrian Empire. Joseph II thereupon closed all but seven of these monasteries, and not until 1918 when this land returned to Roumania, that many of the original churches were repaired and reopened under the direction of Professor Nicholas Iorga.

Though most protestants are familiar with the development of the Catholic church, most are ignorant of the Orthodox, with its centre at Constantinople. The intense rivalry between these two churches weakened their struggle against the Moslem drive from the East which culminated in the fall of Constantinople in 1453. Not until 1374 were the Roumanians able to establish a bishopric at Suceava; before this they were under the control of the Bulgarian bishops of Silistria and Vidu. It is therefore not surprising to find that the Slav Litany was used in these churches although very few of the congregation understood it. With the Turkish Empire firmly established at Constantinople the Greeks had at first some difficulty in gaining influence, but gradually, probably due to their natural ability as linguists, they acquired control of the Church and commerce. Greek then replaced the Slavonic language, but the change took time, and further north it is not unusual to find Slavonic inscriptions around the tombs and on the frescoes even at the beginning of the 16th century. It must be remembered that before this time the Slavonic language had played a part similar to that of Latin in the middle ages, and even the books first published in Roumania were written in it.

There are 17 churches which have survived



Voroneți, above, is possibly the best known of the churches in the Bucowina, and is superbly sited in the centre of a wide valley surrounded by pine trees. The church has the earliest foundation. Originally constructed of wood in 1471, *it was rebuilt by Stephen the Great in* 1488, *and later extended by the Metropolitan Gregorie Rosca in* 1547 *and* 1550, *who added the narthex and had his portrait painted in a prominent position to the left of the door. The frescoes on the exterior are protected from the weather by the wide overhanging eaves of the shingle roof, and around the base and combined with the plinth is a stone seat. The detail shown on the opposite page is just to the left of the window over the doorway, and a part of the window appears in the photograph.*

The south wall at Voroneți (see facing page). The detail above shows the Tartars dressed in tight red trousers and turbans, flaying St. John of Suceava, an act said to have taken place in the Crimea in the 13th century. Above this are two scenes from the life of St. Nicholas, which shows the typical checkerboard pattern of the vestments worn by Saints. The lower illustration shows the earliest portion of the church, with the segmental apse of the naos; in the arcades are figures of saints and angels. The main part of the south wall is taken up with the Tree of Jesse, a magnificent example following the usual plan, but with rhythm rather than geometric form. The background of the scenes are made up of curling green vine leaves on a blue ground, touched with white, arising from the reclining figure at the bottom to the life of Christ at the top.

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Opposite : Two more details from Voroneți showing two different form of exterior frescoe technique found on the same church. In the upper. the wall has been divided up into scenes separated by brick red and white l ies. In this way it was possible to paint small portions at a time while the pl ter was damp. so that more care could be taken. The lower detail is fron the west wall the whole of which is taken up with illustrations of the ast Judgement. Not being framed in squares the paintings had to be exec ted quickly and as a result were usually simple in detail. On the buttress t iere is a row of Armenians and Ethiopians and it is interesting to notic the flexibility in grouping in comparison with earlier Byzantine frescoes. Belc an Angel is sounding the Last Trump and the dead are rising up from their gr ves. The background shows the conventionalized landscape used at Mount A hos.

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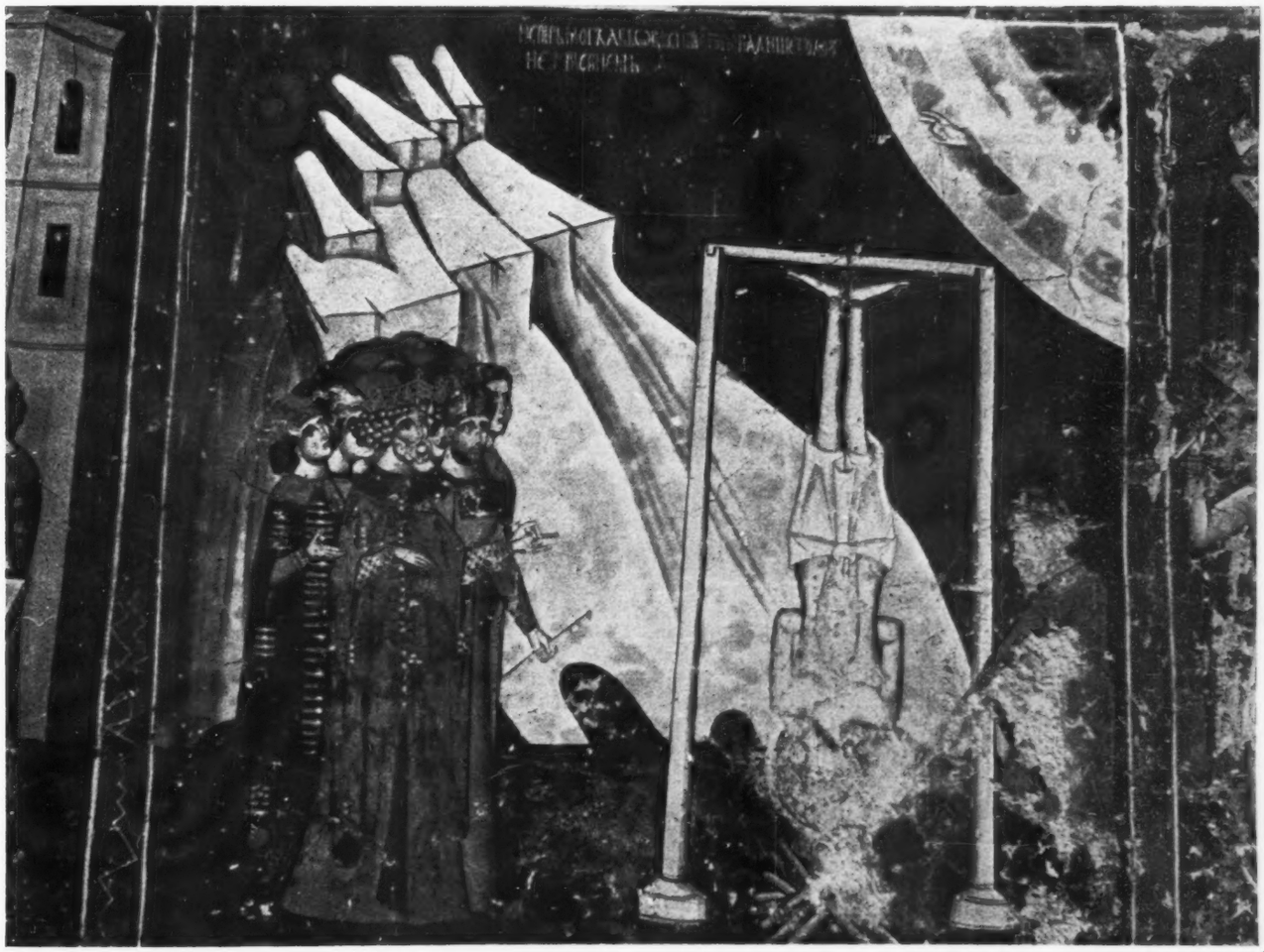
Opposite: The church at Arb ra, top, was founded by the noble an Luca Arbora in 1502. The ph to-graph shows the village ch ch from its west end. It has no cupola, and is entered dire ly from the south into the pron s. The frescoes of the exterior re in a poor state with the ex p-tion of the magnificent west ll, partially protected by the o-jecting buttresses. The a st Dragorsui has portrayed the l es of various saints including tha of St. Parasceve who is shown in he detail suspended head-downw ds over a small fire. The use of v id greens and reddish browns on n indigo background, outlined in brick red and white, show a mas r-ful understanding of the art t at is reminiscent of some of Giot 's work. The church stands i a green close which is entered u er a free-standing belltower.



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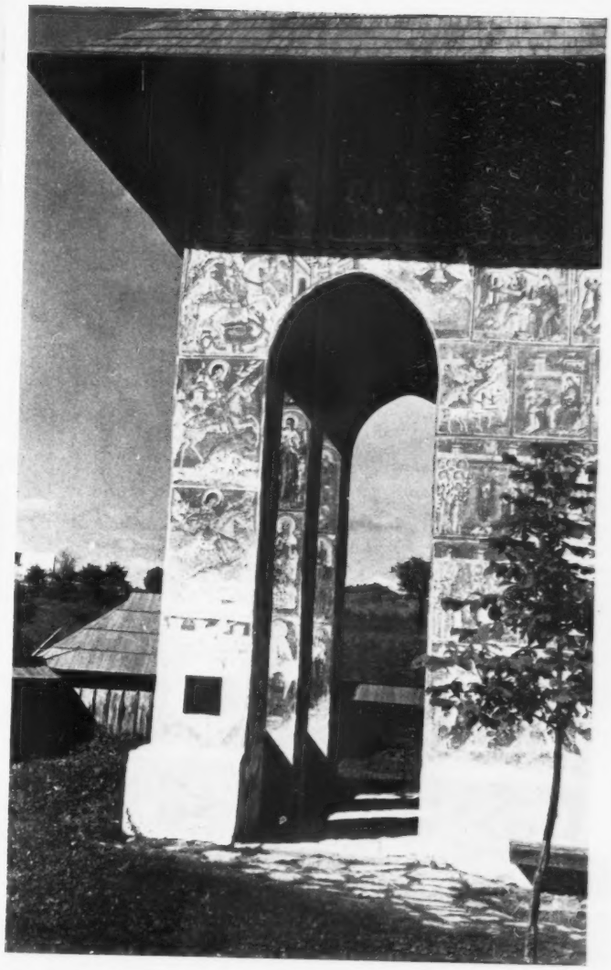
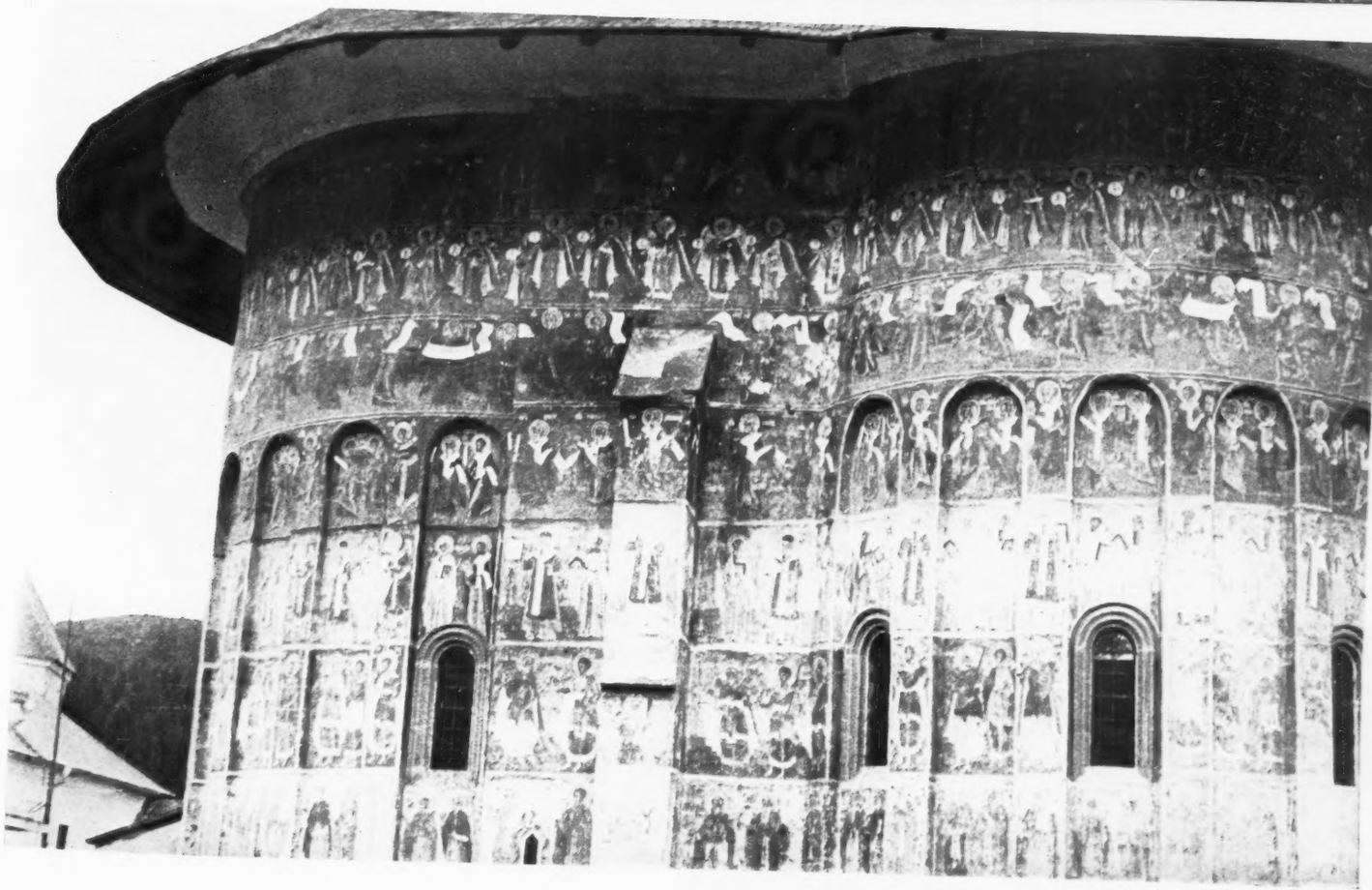
Opposite : The top left and lower pictures show the monastery at Sucevița. It was built in 1580 by the Bishop George Movila and finished by his brother Jeremie. The original paintings are in a good state of repair even on the north wall. It is probable that the artist was more accustomed to painting miniatures and ikons than frescoes, and although the perspective is sometimes weak the detail is exceptionally fine. The church is noted for its freize of Greek philosophers on the south wall with their flowing robes and scrolls. The background is in dark blues and greens separated from the ground by a deep white plinth. Top right, the open narthex of the church at the monastery at Homorului which is typical of those built by Petru Rares.





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the last five centuries, the earliest dating from the middle of the 15th century, the last from the beginning of the 17th. Since for the purpose of this article it would be impossible to describe them all in detail we have confined ourselves to the more important examples; those at Sucevița and Vatre Moldovița which are monasteries, and Voroneți and Abora which are village churches.

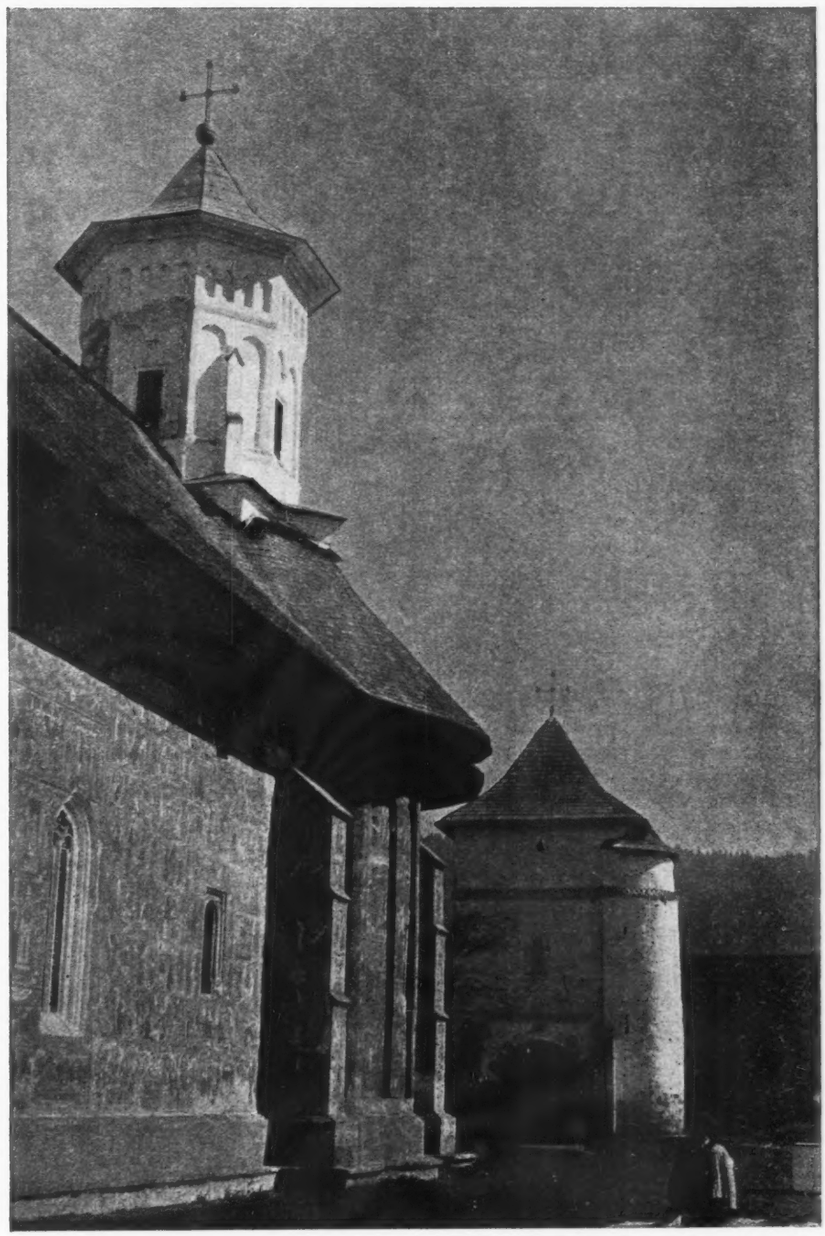
The earliest of the existing churches is at Voroneți built in 1487 by Stephen the Great, who also founded the famous monastery at Putna which was later destroyed. Soon after, Luca Arbora, a nobleman, built (for his family) the church at Arbora, in 1502. Petru Rares rebuilt the church at Vatre Moldovița in 1531; it had originally been founded by Alexander the Good in 1401, but had collapsed as the result of a landslide. Bishop Movila founded the last but one of the monasteries at Sucevița in 1578.

These monasteries are on the whole excellently situated, usually at the junction of three valleys. The churches are free-standing in the centre of high surrounding walls, which have acted as fortifications. On one side are the monks' quarters, and on another over the entrance is the bell tower. Round the church, which lies east to west, is a broad path along which a monk walks summoning the faithful to prayer by hammering on a simantron, a long piece of wood which he balances in one hand.

The plan of the churches is very simple, the form developed from the Roman Basilica and the square-domed temples of the Sasanians in Persia. At the east end is a semi-circular apse which forms the sanctuary and has a small central window. It is separated from the naos by a richly perforated screen, reaching up to the ceiling. The naos is a large square room, having, on its north and south sides segmental apses which are slit with small windows, and a cupola overhead. Here the main part of the service is carried on, but only men are allowed so far in; the women must remain in the pronaos, the largest part of the church which is shut off from the naos by a thick wall with a small door in the centre. It is a well lit room in contrast to the rest and is entered direct from the open air; here evensong is read from the two lecterns.

The inside walls of the churches are completely covered with frescoes, and most have the outside covered as well, but as many remained unused during the Austrian occupation the exteriors are not all in a good state of repair.

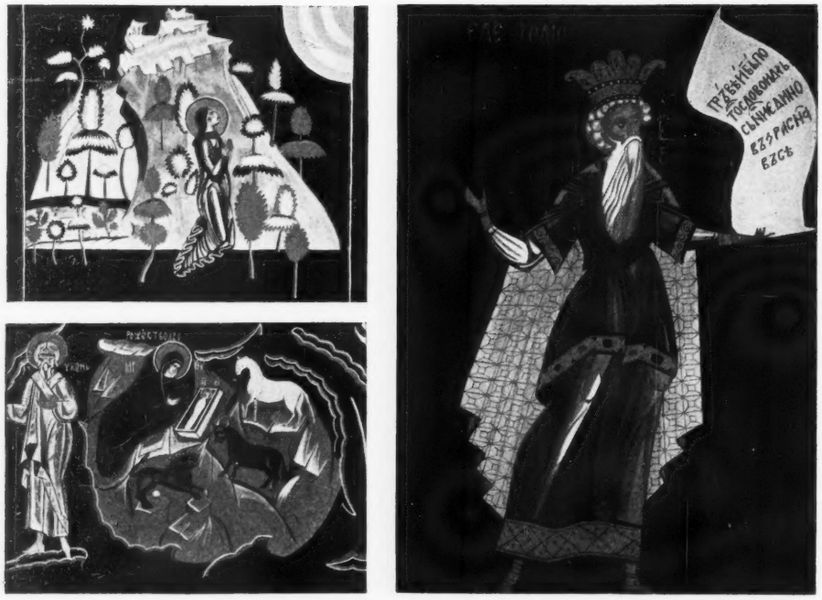
There was a definite order in the arrangement. Starting in the main apse is the Virgin and Child surrounded by Apostles, and lower down are two scenes symbolizing the Washing of the Feet and the Last Supper. At the base are the Fathers of the Church and the more important Bishops. In the naos high up and running left to right are first the Feasts, then the Annunciation, the Miracles and the Passion. On the second row are the Church Celestial and the Church Terrestial followed by the Militant Saints. Centrally on the north wall is the Crucifixion, on the south wall the Holy Ghost, on the west wall the Virgin, whilst overhead in the cupola is the figure of Christ. In an important position to the right of the door leading to the pronaos are the Saints Constantine and Helen, while on the left is a group depicting the founder and his family giving the church to the seated figure of Christ.



The monastery of Vatre Moldovita; a view from within the walls. Over the entrance is a carving of the bull's head and stars of Moldavia. The present church was built by Petru Rares after the original had been destroyed by a landslide. Over the door leading from the narthex to the pronaos is a charming study of the Mother and Child. On the south wall is a notable painting of the seige of Constantinople, and on the buttresses are figures of the Greek philosophers.

In the pronaos the layout is similar: the Saviour and the Virgin are in the centre of the ceiling surrounded by the seven Synods, around the walls are scenes from the lives of the martyred saints. There is also a definite order for the frescoes of the exterior of the church. They usually had the Tree of Jesse on the south wall and the Last Judgement occupying the whole of the west wall. Figures of saints are painted in the shallow niches that run round under the eaves and on all the apses. Other scenes show the Life of the Virgin, the Creation, the seige of Constantinople, and there are many small panels of the Christians being tortured by the Turks.

It is very difficult to be sure of the authorship of the paintings, but we do know that a certain Marco was the artist at Voroneți, and that a man named Dragoșui painted Arbora. We also have a statement from the Tsar of Russia that the painter he had sent for from Italy was waylaid when on his way to Moscow by Stephen the Great; and we have evidence from documents still existing in Venice that the prince sent to that city for artists. The dates of the churches and the paintings do not always tally and it is suggested that Arbora although built in 1502 was not painted until 1541, and that Voroneți, built in 1488 was painted as late as 1550.



Three of a series of transcriptions made by the authors of the accompanying article from frescoes in Bucowina churches. Top left, a scene on the west wall of Arbora from the life of St. Parasceve (see also Plate iv). Bottom left, a detail of the Tree of Jesse on the south wall at Voroneți (see also Plate ii). The scene is encircled with leaves and is painted on a deep yellow background with the Virgin in dark maroon, accompanied by a horse, a bull and a lion. Right, one of the seven Greek philosophers from the south wall at Sucevița (see Plate v) one of the last churches of the Bucowina. It is interesting to notice when comparing the Byzantine with the Italian Renaissance that in both cases the movements were academic in the beginning but developed later their own freedom.

The method employed was rarely that of the Italian masters of the Renaissance. Cennino Cennini describes how the mortar was first prepared by slaking the lime, and later reducing it to a powder. It was then mixed in the proportion of two parts of coarse sand to one of lime and applied directly to the wall like "rough cast." The colours were composed of metallic oxides and earth colours, ground together with water and then applied to the fresh rendering.

At Mount Athos they painted with a distemper made from mineral colours mixed with powdered lime. The surfaces of the walls were kept flush and quite dry, and before the application of the paint, water was thrown on to the walls and they were covered with damp cloths to make them porous. This practice passed to Walachia and from there to the home of the 16th century frescoe painters in Moldavia. Here they prepared the walls by rendering them with three coats of plaster: the first consisting of two parts of sand to one of lime and laid with a comb float in large areas at a time, 1½–3 cms. thick. Since the walls were built up of random rubble over a metre thick, this first rendering acted as a levelling coat. It is interesting to find they never used metal keys on the wall as was so common in Italy. The second coat, 7–8 mms. thick consisted of very fine lime mixed with hemp to make it pliable. The third coat was also of very fine lime and hemp, and was left buried in the ground for a long time until it formed an oily inert paste. From chemical analyses we find that an oriental madder was used for the red pigments, vegetable indigo for the blues and ferrocyanide or chromium oxide for the dark green. The marvellous weathering properties led people at first to suspect that wax was used as a basis, but there are no traces left of it. The colours are found to lie on a rendering of lamp black and charcoal; this was obtained by mixing the lamp black and charcoal together with the colour into a paste with water. When this was applied to the walls, the former settled out and formed a protective layer against any possible reaction between the pigment and the lime, leaving the colour in a pure state on top. The paint does not penetrate very deeply as the plaster is so fine, the actual layer of colour is only about a ¼ mm., in contrast to the Italian frescoes where it is deeply embedded, although the result is just as permanent.

The commonest method of mixing paints was to use the colours, powdered charcoal, and gall with a drop of vinegar. This had the advantage that speed in application was no longer necessary and so more time was left for corrections. Padlacha who researched into the composition of the colours used at Moldovița and Sucevița, discovered vegetable colours and a size made from the liver of animals; while Luția at Voroneți found that the colours were mixed with lime, egg, gall, vinegar, honey, some turpentine, and the whole mixed with water.

Before starting to paint, the scenes were first sketched on paper and then either scored on to wet plaster or drawn on with a brick red line. We have not mentioned the frescoe painters' handbook that was produced at Mount Athos in the 16th century as it is now thought to have had very little bearing on these paintings.

One of their remarkable qualities is the subtle blending of dark blues and greens in the backgrounds on the exterior, and the sparkle that is obtained by the use of white brush lines to accentuate the figures. It is quite impossible to give the rich effect of the colours in photographs or to show how perfectly they harmonize with the background of dark pine trees, separated only from the landscape by the deep whitewashed plinth; or how in the winter they stand out against the snowscape.

The paintings are essentially Byzantine, and this period in art has been rightly called the Byzantine Renaissance. Details such as windows and doors sometimes show a Gothic influence which was probably due to architectural sketches coming over with travellers or artists from Venice; while the arrangement of the cupola, the combination of the drum and shingle roof, are reminiscent of the romantic oriental influences that were later to reach their climax, in Russia and Southern Roumania. But it is in the Bucowina that we have the purest form of Byzantine art outside Greece and Asia Minor. It bears the same relation to Mount Athos a 1,000 years earlier that Florence does to ancient Rome. There was no mere copying of a style but a rebirth of a culture that was to flourish intermittently for 200 years, and then suddenly to disappear.

Chronological order of the churches.

Alexander the Good, 1400–32, founded: Radauți, 1402; Vatre Moldovița, 1401; Solca, 1419; Homorului, 1428. All these were destroyed.

Stephen the Great, 1456–1504, founded: Putna, 1456; Milchouți, 1481; Petrauți, 1487; Voroneți, 1487; St. Ilie, 1488; Volovați, 1492; Reuseni, 1502–4; St. Demetrius, Suceava, 1474.

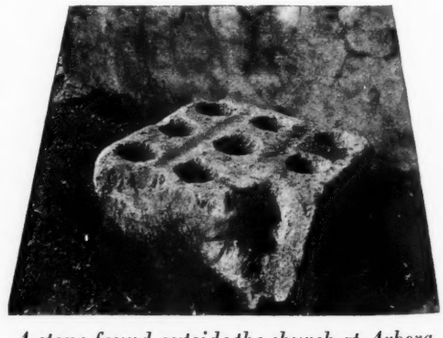
During his reign Luca Arbora founded Arbora, 1502 and Bojarin Trotusanui, Parhauți, 1522.

Petru Rares, 1527–46, rebuilt Homorului, 1530; Vatre Moldovița, 1531; St. Ilie, 1540.

Sobieski, King of Poland built Zamka, 1550, also three churches in the town of Suceava.

Bishop Georg Movila founded Sucevița, 1578.

The Metropolitan Crimka founded Dragomirna, 1602.



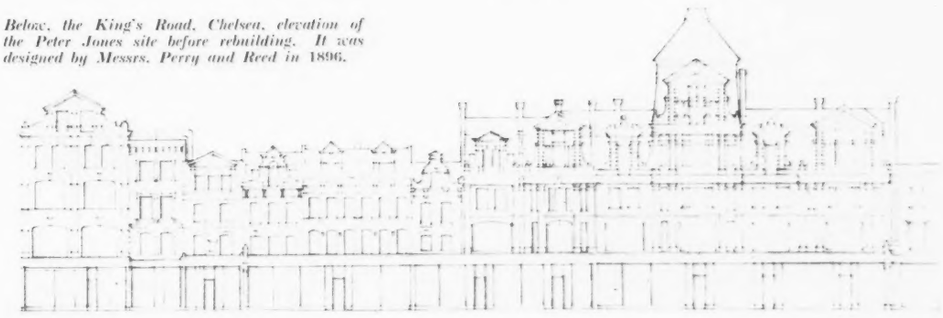
A stone found outside the church at Arbora, in which the painters of the frescoes mixed their colours. The colours usually consisted of the colour pigments, powdered charcoal, gall and vinegar.

ETER JONES STORE, SLOANE SQUARE

WILLIAM CRABTREE; SLATER AND MOBERLY; PROF. C. H. REILLY, ASSOCIATED ARCHITECTS

en the first wing of Peter Jones
s opened its importance as a
ture contribution to modern archi-
ture, was recognized. But as the
lding was only the first unit of a
ch larger scheme, detailed presen-
on in THE ARCHITECTURAL REVIEW
s withheld until the whole was
npleted. Virtually the whole of the
nd site owned by the store
npany has now been rebuilt, and
cept for some proposed modifica-
ns to the upper storey (see next
ge) the building is in its final form.
remarkable tribute to its merits
s recently been paid to it in THE
CHITECTS' JOURNAL, where an enquiry
ongst distinguished laymen for
e best modern building resulted in
ter Jones getting twice as many
tes as any other.

Below, the King's Road, Chelsea, elevation of the Peter Jones site before rebuilding. It was designed by Messrs. Perry and Reed in 1896.



2

Illustrations 2 and 3 are from much the same viewpoint in Sloane Square, the only real difference between the two aspects of the building being in the skyline, which in 2 is somewhat restless, while lettering not designed by the architect appears at the top of the building. The architect's perspective sketch 3 shows the eventual skyline when final alterations which, as now scheduled, include a swimming bath and sun-lounge with sliding roof have been carried out.

The terrace 4 runs round the building on three sides of the 6th floor, which is devoted to workrooms, staff restaurant and staff rest rooms. The balustrading to this and the 7th floor terrace is composed of cast iron grid units. Two different forms of provision for goods display are shown in 5 and 6. In 5 the spaces between lifts have been utilized as showcases to attract the eye of the shopper awaiting the coming of the lift-car. The showcases are built out to the face of the roll-steel fireproof shutter cases above each lift opening, the reveals to the doors being finished in lino, and each lift unit a different colour on each floor. 6 shows the lower half of the semi-elliptical stairway between the basement and one of the two King's Road entrance halls, the stepped showshelves providing a continuous well-lit display of goods which tends to lead the purchaser down to another sales floor.

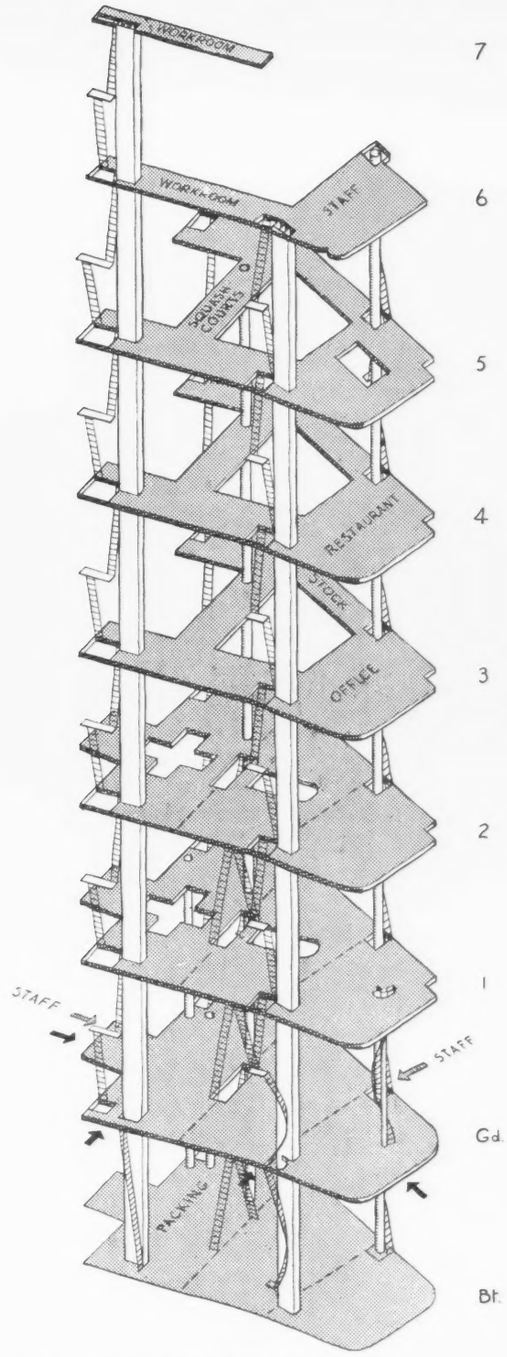
3

4

5

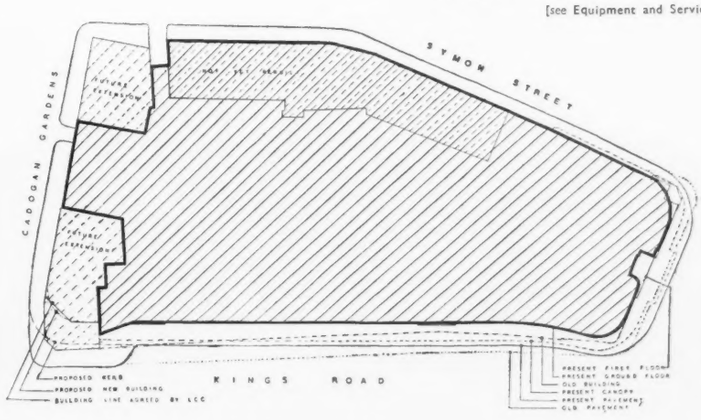
6

PETER JONES STORE, SLOANE SQUARE



VERTICAL CIRCULATION IN DIAGRAMMATIC FORM

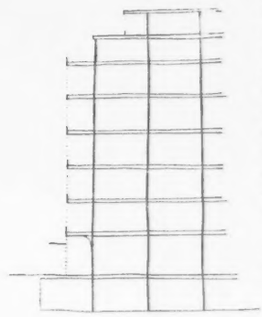
[see Equipment and Services, page 298]



SITE PLAN

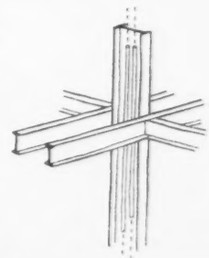
THE PROBLEM OF THE DEPARTMENT STORE

A DEPARTMENT store is a collection of small shops under one roof and ownership. While this allows great latitude in each shop or department the store-owner is naturally interested in preventing the losses of any one section from neutralizing the profits of the others. Regular analyses of sales returns and customers' accounts soon show which departments are attracting the public and which are not; which lines of goods are selling and which are being left on the shelf. As the quantity of popular commodities can be increased and the unpopular discontinued, so the busier departments can be increased in floor area and the less frequented, if not discontinued, can at least be reduced. Two other factors that play their part in improving sales results are good salesmanship and good buying, the latter calling for an Old Moore-ish ability in forecasting the erratic swerves of fashion. The study of fashion trends is *ipso facto* the study of mob psychology so the department store in consequence becomes a taste-barograph of the Man-in-the-Street. Fluctuations in popularity may cause this week's hardware department to be part of next week's textiles, which will necessitate a complete change to different types of showcases, and the quicker the change can be effected the less will be the loss of time and money. It can readily be seen, therefore, that the primary requirement in the planning of department stores is *adaptability*, and the successful store plan is one that permits any number of different arrangements of its selling space, with equal ease of access at all times.



Cantilever construction allows the outside stanchions to take a central load, allows free window space and allows roof balconies on the same structural system. The basement is carried under the pavement.

In addition to flexibility of sales areas the number of more permanent departments—offices, workrooms, lavatories, fitting rooms, hairdressing cubicles—all call for natural lighting and ventilation wherever possible, and hence for a variety of different subdivisions along the external wall. In the new Peter Jones building the external wall has therefore been divided into 4 ft. units, these being found to fit in well with most of the requirements. This necessarily became a factor in determining the outside appearance, as was the clients' stipulation that since the primary function of the building was to produce an income for the people working there, everything should be done to make use of as much floor space as possible. The external wall consequently became a tight skin stretched round the building, the cantilever construction adopted making this possible.

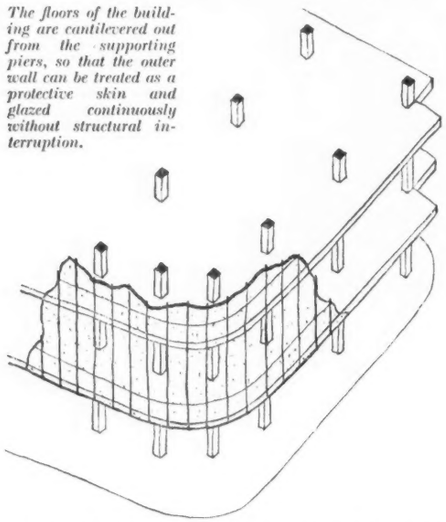


Pipe-runs pass uninterrupted up the channels of the stanchions.

Disregarding the small shop that has grown by gradual additions and alterations into a somewhat confused emporium, there are two types of department store plan in general use—the Open Well and the Open Floor. The open-well type with its top-lit centre space around which the various floors form tiers of continuous balconies provides an imposing effect of spaciousness and

has the advantage of attracting purchasers from one department to another. The drawback is the waste of floor space. The open floor, on the other hand, provides the maximum amount of selling space, but having only natural side lighting is not always practicable.

In both types, but particularly in the latter, anything that tempts the customer from one floor to another is a definite selling point, and the question of vertical circulation therefore becomes exceedingly important. Lifts should be readily accessible and—if possible—visible, as it is quite easy to lose sense of direction in a large store when the mind is befuddled with the fever of purchase. The sex that chiefly inhabits large stores has until recently not felt particularly attracted towards moving stairways, though the advantages of these are obvious, but their popularity is increasing and in Peter Jones' the temporary stairs (*see* plans) are intended for eventual replacement by escalators for which full provision has already been made. The welded steel spiral stair from ground floor to first (*see* page 296) is a new departure in customer temptation, however, and attracts by its openness.

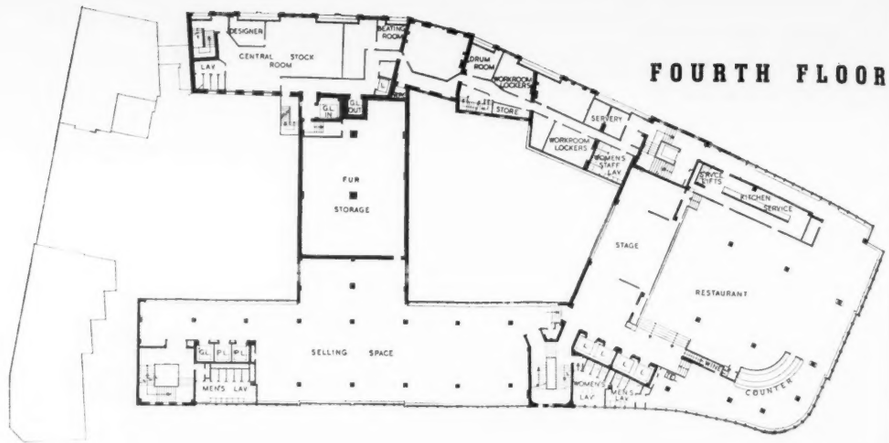


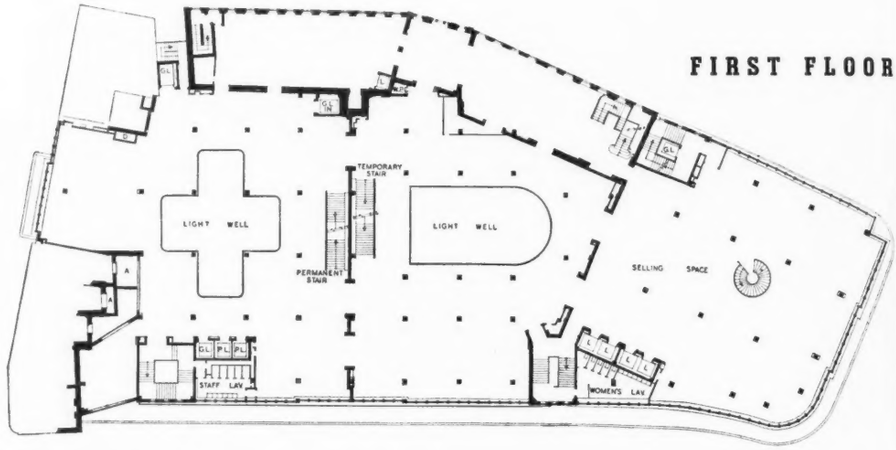
The floors of the building are cantilevered out from the supporting piers, so that the outer wall can be treated as a protective skin and glazed continuously without structural interruption.

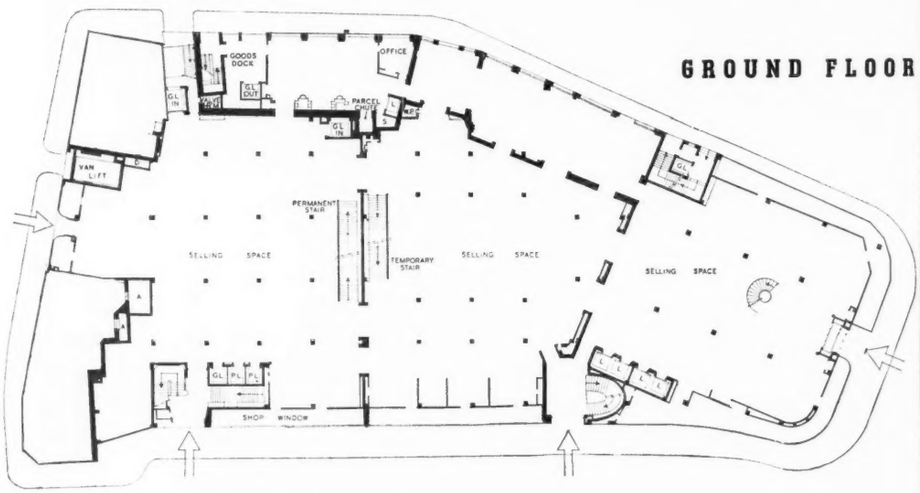
The Peter Jones building incorporates both types of store plan, the Sloane Square block with natural lighting on three sides being open-floor, and the wider rear section having two open top-lit wells. Lighting experts predict radical improvements in artificial illumination in the next decade, so in the construction of this portion of the building the steelwork was designed to enable the wells to be floored over at a later date.

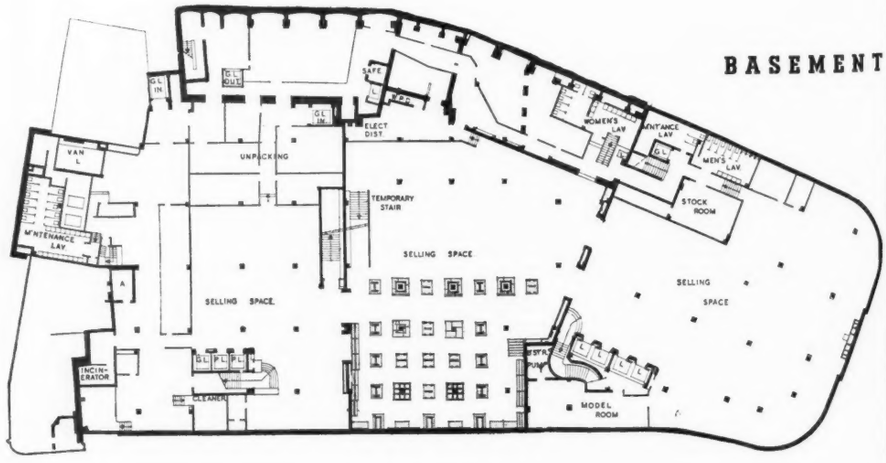
The cantilever construction was adopted for several reasons: A most economical grid could be employed, regardless of elevation and the irregular plan outline; the outside stanchions did not have to take eccentric loads; upper floor setback for balconies and continuous shop windows without obstruction on the ground floor could be adopted; and, by employing a full span, the basement could be extended out under the pavement with ease. The cantilever beams themselves are in duplicate, and this has the advantages of avoiding the use of deep single beams and enabling pipe runs to pass directly up the channels of the stanchions without having to twist round the cantilevers (*see* sketch).

Before the adoption of the steel cantilever construction, however, a reinforced concrete external wall system was contemplated, and a trial portion of façade was executed on the rear (Cadogan Gardens) elevation (*see* page 295) but the idea was abandoned as impractical owing to the length of time taken in drying out. The present elevation is similar to the trial elevation in general effect since the mullion motif had to be retained on account of the numerous interior subdivisions, but the mullions are hollow pressed steel and the external wall a glazed steel net.



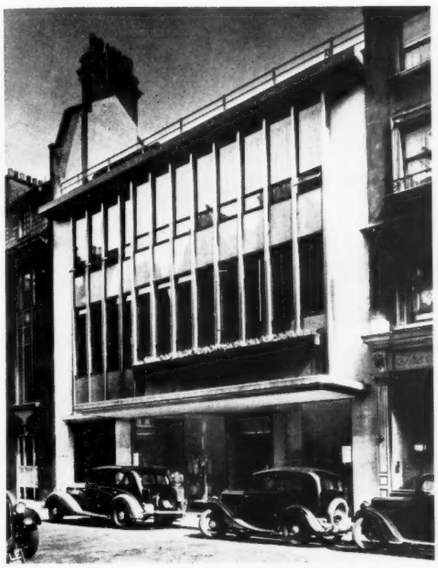


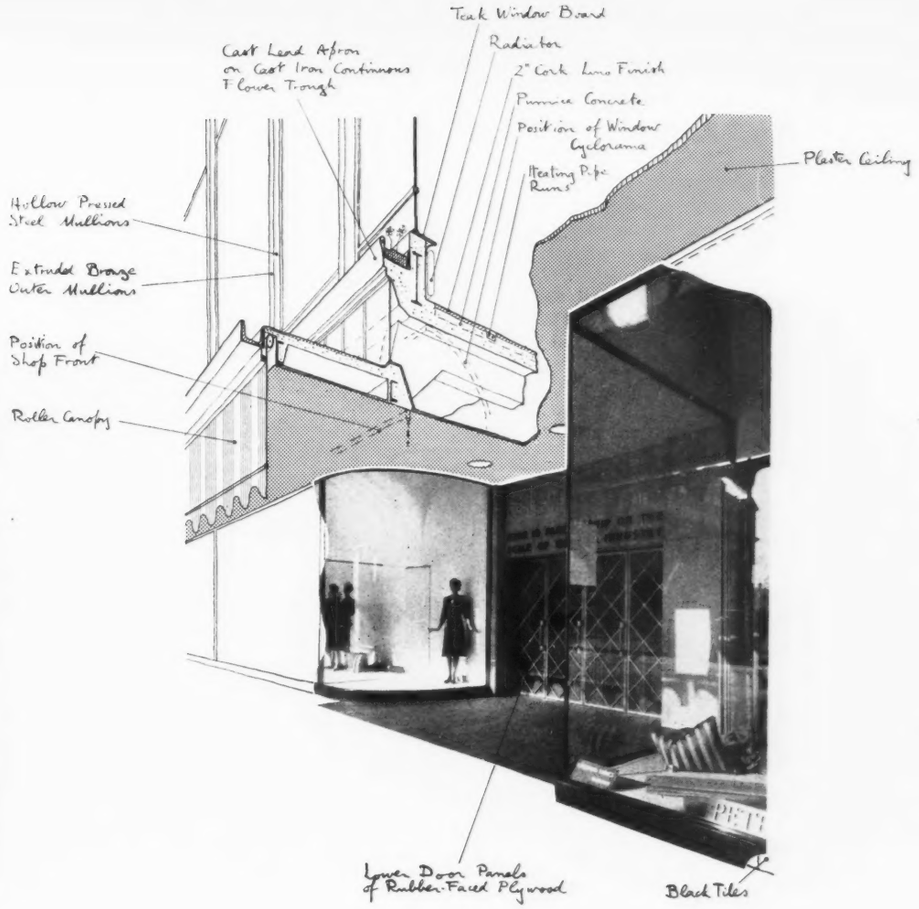




B = DUCT
L = LIFT
A = AREA
PL = PASSENGER LIFT
GL = GOODS LIFT
WPC = WASTE PAPER CHUTE

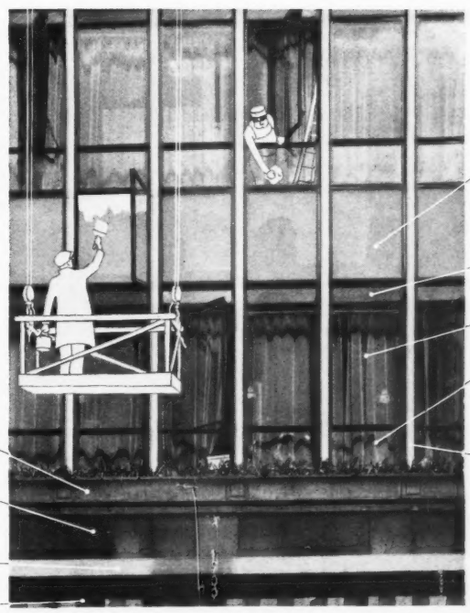
SCALE 0 10 20 30 40 50 FEET





The Exterior

ENTRANCE, CANOPY AND WALL FACING

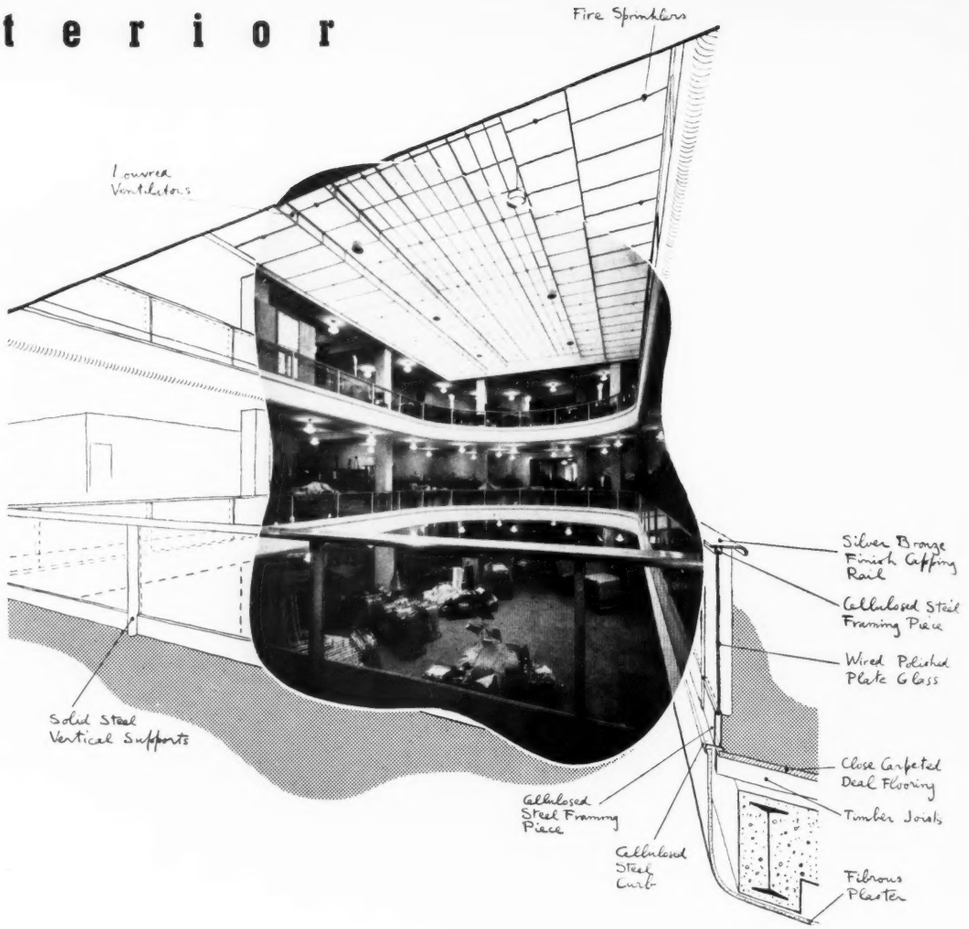

Clear-glazed Steel Opening Panels protect Distempered Walling behind
Horizontally centrally-pivoted Lights
Vertically centrally-pivoted Lights
Top-hung Bottom Lights
All Windows can be cleaned from inside Building, thus reducing Insurance Costs
Extruded Bronze Outer-facing to Pressed Steel Mullions
Continuous Cast Lead Flower Trough
Top-Lighting to Ground Level Shop Windows
Canopy Gutter
Vertical Roller-Blind

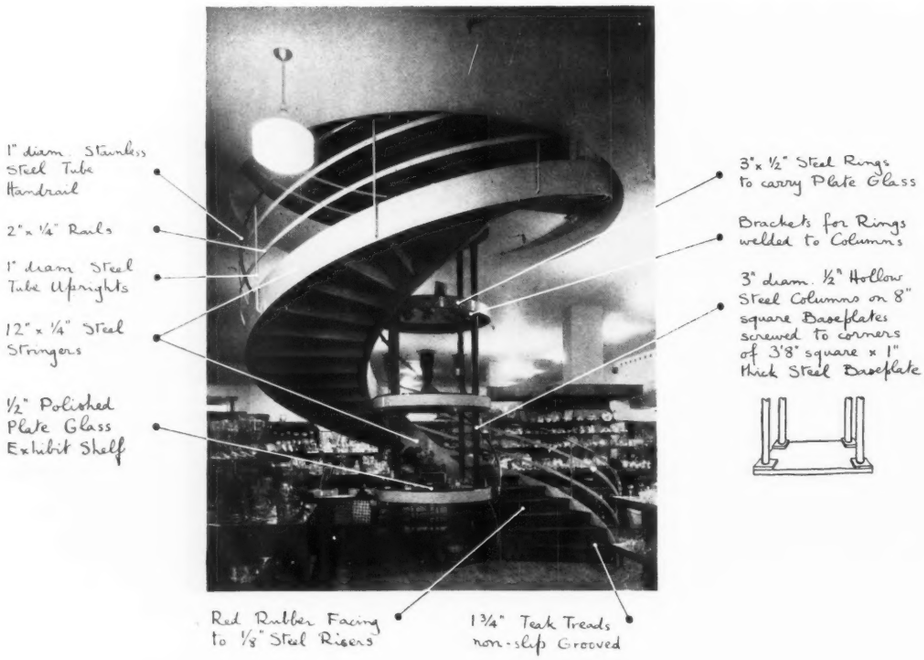
To facilitate the arrangement and subsequent rearrangement of internal partitions, it was decided to divide the façade into 4 ft. units. A trial elevation was carried out in reinforced concrete at the Cadogan Gardens entrance, above left, but the time taken in drying out led to its abandonment in favour of a cantilever construction, the outside wall becoming a skin only. The 4 ft. units were retained, but the tile-faced reinforced concrete mullions were replaced by hollow pressed steel mullions with extruded bronze outer facings below, left. The clear glass panels between the windows to each floor are opened by means of a carriage-key enabling the face of the concrete walling inside to be redistempered any colour. The illustration, above right, shows a typical section through the lower portion of the external "skin" wall supported by cantilever beams, the shop front and window cyclorama indicated in broken line showing their positions in relation to the clerestory lighting and cantilevered canopy.

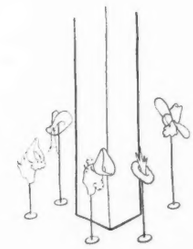
The Interior

One of the principal problems confronting the owner of a department store is to attract customers to the higher sales floors. The ground floor is obviously the most valuable from the sales point of view and various devices are adopted to lure purchasers upwards.

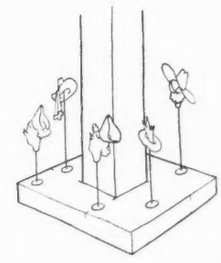
One of these devices is the adoption of the open well plan. This reveals all floors to the customer as galleries round a spacious top-lit hall and shows the whereabouts of certain departments at a glance. There are two such top-lit wells in Peter Jones', the one shown here being in the central portion of the building. Below left, is the welded steel circular stair situated just inside the Sloane Square entrance to tempt the customer to the first floor. The central supporting unit carries several plate glass display shelves which may be used to "overlap" one floor with the next. The staircase well is in reality a miniature "open-well," but being so small allows much more selling space on the upper floor, which, lit as it is on three sides, requires no top-light. The use of such cheerful colours in the cellulose finish as cream and red, and red rubber facings to the steel risers, together with the general feeling of "openness" all tend to make the customer feel that in ascending or descending the stair he is passing not to a completely different floor but only to another part of the same floor.



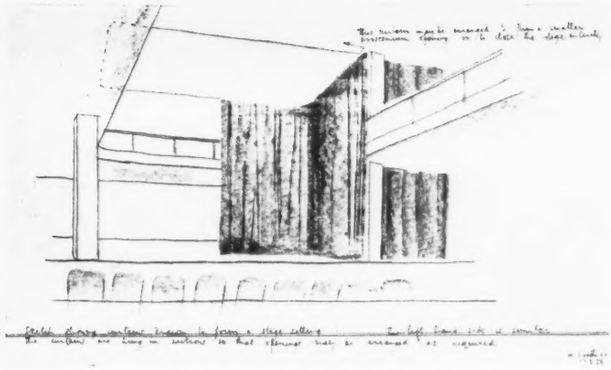

1" diam. Stainless Steel Tube Handrail
2" x ¼" Rails
1" diam. Steel Tube Uprights
12" x ¼" Steel Stringers
½" Polished Plate Glass Exhibit Shelf
3" x ½" Steel Rings to carry Plate Glass
Brackets for Rings welded to Columns
3" diam. ½" Hollow Steel Columns on 8" square Baseplates screwed to corners of 3'8" square x 1" thick Steel Baseplate
Red Rubber Facing to ⅛" Steel Risers
1¾" Teak Treads non-slip Grooved



As important as the circulation of customers to all floors is the display of the goods. Free-standing articles, as in the upper sketch, do not "tell" nearly as strongly as when they are given the support of a rostrum. The use and necessary adaptability of salesroom furniture is considered on pages 297–8.



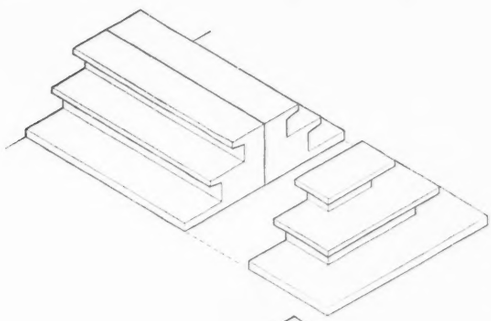
PETER JONES STORE, SLOANE SQUARE



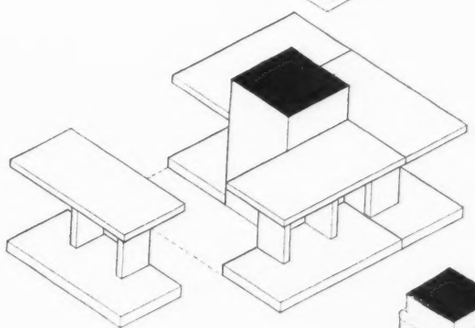
The public restaurant on the fourth floor with its stage which forms a permanent feature at one end. The proscenium arch is a later addition, the architect's original conception being freer, as shown in his sketch alongside. The balustrading is similar to that shown on page 296, but the wired glass has been backed by coloured paper.

Movable Equipment

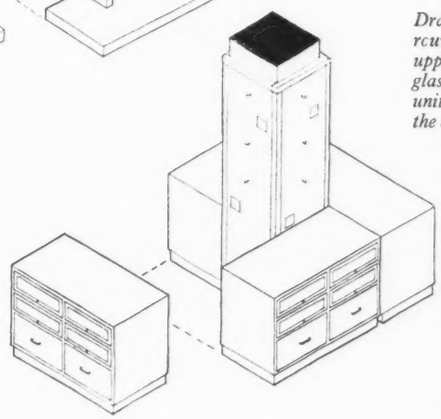
A department store building is a shell in which the various departments can spread themselves in different ways. As goods vary in popularity so departments will vary in size. This calls for flexibility in the fitments in these departments and thus for the adoption of standardized, and therefore easily interchangeable units, the use of which enables alterations to be made in departments with as little delay as possible. A number of these unit fitments, together with some typical examples of free-standing showroom furniture are illustrated on this page and the next, being designed in the stores' own architectural department. The fittings generally have a life of five years or so, the subsequent designs naturally incorporating all improvements discovered during the fittings' use. Drawings by G. Brian Herbert.



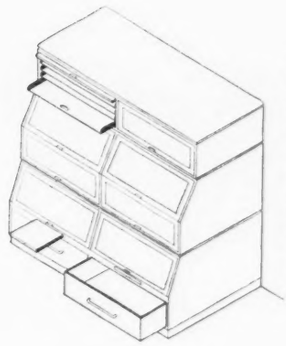
Floor display units either as islands or for use against a wall. Constructed of plywood on deal framing, the top being lino covered and the plinth of hardwood.



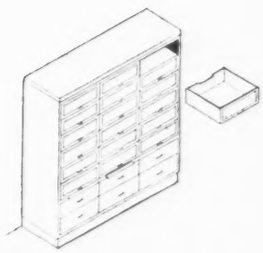
Simple table units for use round a column. Constructed of ¼ in. plywood on deal framing, with hardwood plinth.



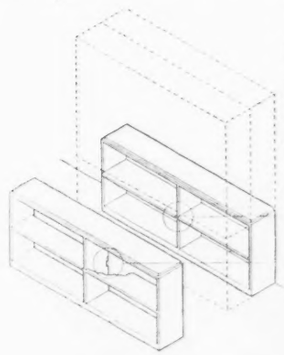
Drawer units for use round a column, the upper drawers being glass-fronted. The panel units immediately round the column contain hooks and plug-sockets for the display of electrical fittings. The panels conceal the wiring. These and the two foregoing units are all primarily intended for the electrical department, a typical layout of which is shown on the basement plan on page 294.



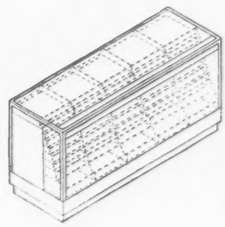
A tier of three Quick-Service Units which together with the next two examples is for behind-counter use. In this case the goods displayed on trays behind the glass fronts are umbrellas of different lengths. The units are Oak veneered and the oak cornice and Australian Walnut plinth are detachable.



A wall-unit of glass fronted drawers for behind-counter use in the ribbon department. Construction is similar to the foregoing example, and both have pull-out seats for assistants.



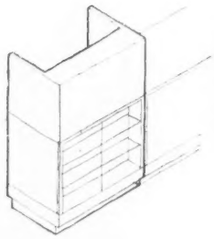
Changes due to the seasons or other causes may mean changes in the lengths of the bolts of cloth on view behind the counter. The shelf units shown here are variable in height, width and depth, upper units dovetailing on to lower units with a slide action, and backless front units interlocking with the wall units by means of metal shod dovetail hook-action wedges shown in detail alongside.



A counter unit adapted for art needlework. Top, front and sides are clear glazed, the framework being satin-finish stainless steel. The glass fronted show drawers are lit by strip lights along the top front edge and the source of light is screened by a mirror edging and sand-blasted margin, while a mirror end also hides the drawer slides.

A small table of veneered block boarding for end-of-counter display.

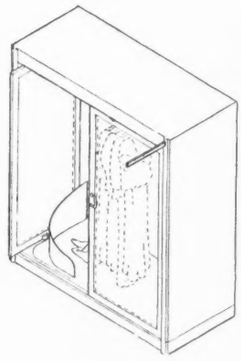
A table from the millinery department with hinged mirrors, constructed of hardwood with a veneered top. The two hardwood slides increase the area of the table top. Alternatively, the table may be constructed with a drawer instead of the side slide.



A packing bench unit with showcase below for end-of-counter use in the chocolates department. The plinth is of Australian walnut and the packing screen of olive ash.

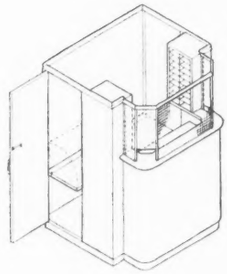
Two showroom chairs, the armchair being of mahogany, the other either of teak and silver greywood or mahogany and batula. The upholstery is hide.

An assistant's desk adapted for end-of-counter use.



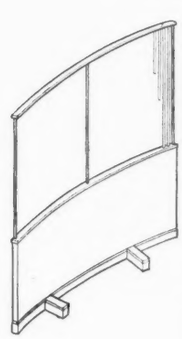
A hanging dress case with glass fronted doors that slide open on the inside as shown. A silver bronze screen prevents long dresses from being torn or dirtied by the door slides, and the exposed arris of the canaletta plinth is protected by a metal angle. Pull-out rails enable selected gowns to be hung outside for closer inspection.

A buyer's desk of oak veneered blackboard with Australian walnut plinth.



A cash desk in mountain ash faced plywood on framing, hardwood shelves, cornice rail and plinth. The doors are lockable inside and wire mesh or glass panels separate the cashier from the payer. The till is situated beneath the lower inner shelf.

An assistant's desk of Australian silky oak on an enamelled mild steel tube frame.



A curved screen unit either for temporary division of departments or traffic direction. The canaletta top is supported on three matt finished steel rods, the intervening spaces being filled with $\frac{3}{4}$ in. diam. clear glass rods. The lower portion is of mountain ash faced plywood on deal framing and the whole moves on castors.

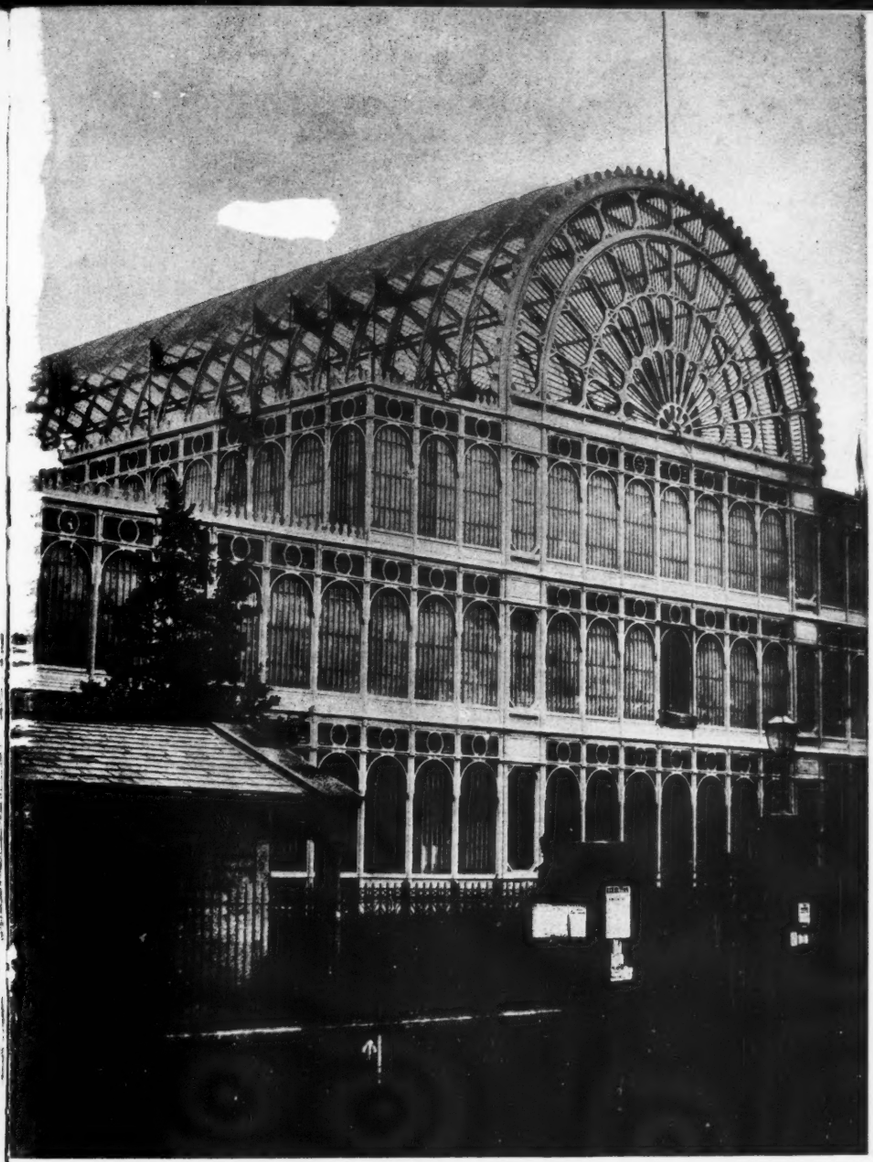
Equipment and Services

SANITATION AND WATER SERVICE—Automatic float control pumps are used to raise the water to the main storage tanks situated above the water company's pressure. Owing to the level of sewers, the basement drainage is collected into an ejector which raises the effluent to one of the high level sewer connections. Three sewer connections are used at basement ceiling level which saves long horizontal drain runs.

HEATING AND VENTILATION—Electricity is taken during the night from Chelsea Electric Supply Company, and the three thermostatically controlled electric boilers, with an output of 750 kilowatts or 2,500,000 B.T.U.'s per hour, heat the water during this period to 240° F. During the day electrically driven centrifugal pumps circulate the water throughout the building and hot water at the top and cold at the bottom of the cylinders are kept automatically mixed. Fresh air is drawn into the building through a large fan in the boiler room in the sub-basement where it is washed, filtered and distributed, the lavatories and kitchens having their separate systems. A ventilating trunk with its circular outlets can be seen in the lower photograph on page 296. A large passageway runs the length of the building beneath the basement and carries all horizontal services enabling these to be inspected at any time.

PNEUMATIC TUBE SYSTEM—The Sanction office on the 3rd floor is the centre of the pneumatic tube system by means of which the sanctioning of the customers' accounts can be accelerated. The account is borne in a container by means of air suction from the sales department to the sanction office, carried on a moving belt to the authorizer, and when approved is returned to the sales department all in the space of a few seconds. The system is operated by a motor-driven turbine.

CIRCULATION—Vertical circulation of customers is effected by means of lifts, staircases and (eventually) escalators, distributed throughout the floors as shown in the circulation diagram on page 293. In this diagram the passenger lifts are shown as rectangular tubes, and goods lifts as circular tubes. Entrances are on all four sides of the building, the staff entrance and staircase to all floors being in Symon Street. A shuttle van lift at the west end of the building enables electric shuttle vans to be taken directly to the basement and loaded with goods immediately they are sold when they can be taken at once to the Central Despatch Building half a mile away in Draycott Avenue. This system effectively obviates traffic congestion round the building and gives speedier despatch to customers.



Photographs of the Great Exhibition of 1851 have never before been published. The top one shows the Great Transept, but in the foreground can be seen one of the Gate Lodges of Hyde Park, to be precise, the Prince of Wales' Gate Lodge opposite Ennismore Gardens. Lower picture, an interior with sculpture and exhibits in place. The photographs are included in the Jury Reports in the Library of the Victoria and Albert Museum, where they have just come to light, and by whose permission they are for the first time illustrated here.

The Great EXHIBITION WAS PHOTOGRAPHED

WHEN people think of the Great Exhibition they remember old prints, drawings and paintings, especially perhaps the wood engravings in the *Illustrated London News*. They are reproduced over and over again whenever the subject arises in the Press, and are the chief authority for its appearance. But there exists a much more authentic source in the form of actual photographs which have remained virtually unknown and unpublished till this day.

In 1852 were published the reports by the various juries on the exhibits. There was also issued a presentation edition-de-luxe of the Descriptive Catalogue and the Jury Reports, the former in three, the latter in four, volumes. All these were illustrated. The usual engravings adorned the Catalogue, but a much more ambitious plan was carried out in the Reports. These were illustrated by one hundred and fifty-five calotype photographs pasted on to plates. Before describing them, a word should be said of the general appearance of the volumes themselves. They are entitled: *Exhibition of the Works of Industry of all Nations*, 1851. *Reports by the Juries on the subjects in the thirty classes into which the Exhibition was divided.* They are elaborately bound in red morocco, and, inside, the doublures are of blue watered silk stamped in gold with the Royal Arms and the double monogram of Queen Victoria and Prince Albert.

The photographs, as mentioned above, are calotypes. That is to say, they were carried out in the only alternative process to daguerreotypy available at that time.* The daguerreotype could not be multiplied; each photograph was made on a silvered copper plate, was rendered positive and fixed. The calotype, on the other hand, was made on thin paper and could be printed through on to other sensitized paper as is done with the modern negative. Both processes were first published in 1839, the daguerreotype by L. J. M. Daguerre, the calotype by William Henry Fox Talbot. It is from Talbot's invention that all modern photography really derives, and it is interesting to note that the first book to be illustrated with photographs was Talbot's *Pencil of Nature*, which appeared in 1844. The Great Exhibition Jury Reports, therefore, have an added importance as being one of the earliest of photographically illustrated publications.

The authorship of the Great Exhibition calotypes will probably always remain uncertain. They were almost certainly not done by Talbot, as has been suggested, for he must have been fully occupied at that time making his other experiments, especially those dealing with high-speed spark photography. But a clue is to be had in the engraved illustrations in the Descriptive Catalogue, where the name of P. H. Delamotte occurs as the draughtsman. Delamotte is known to have collaborated in making the well-known collodion photograph in the Victoria and Albert Museum of the opening of the re-built Crystal Palace at Sydenham in 1854, and he was recognized as a very successful pioneer in photography.

The calotypes cover almost all classes of exhibits in the Exhibition and show, with varying clarity, an astonishing variety of industrial and artistic objects. In addition, and by far the most interesting from the modern standpoint, are the general views of the galleries and the close-ups of the exterior. For the first time one can get some idea of the real size and "feel" of the place; but the pleasure and significance of these rare photographs brings one very serious regret. One asks, why did not the anonymous photographer take and attach one or two general views of the exterior, showing its setting amongst the trees of the Park? Technically it would have been easy. Such things had been done admirably ten years before, and it is almost unbelievable that the official work (which, as noted above, runs to 155 plates) was not made to include such views.

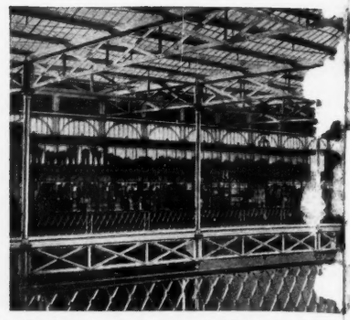
Perhaps there are some more photographs of the Exhibition hidden away. The present author has only seen one other set, and those were very small daguerreo-

* The Collodion process was first announced by Scott Archer in 1851.

type views of the interior, and in very bad condition. But Volume II of the Jury Reports contains a passage which leads one to believe that such documents are either very scarce or non-existent. "In closing our remarks on this department of the Exhibition," it says, "we may be permitted to record some degree of disappointment at the absence of specimens of the application of photography to any department of representation, other than such as please the eye or administer to personal feelings. As regards its application to an infinity of useful and instructive purposes, we have literally nothing!"

If we endorse the exclamation mark, we also accept with gratitude the good fortune which has discovered these strange and fascinating photographs. One day perhaps some dusty attic may throw up a "general view" to complete the picture of the Great Exhibition.

CHARLES HARVARD

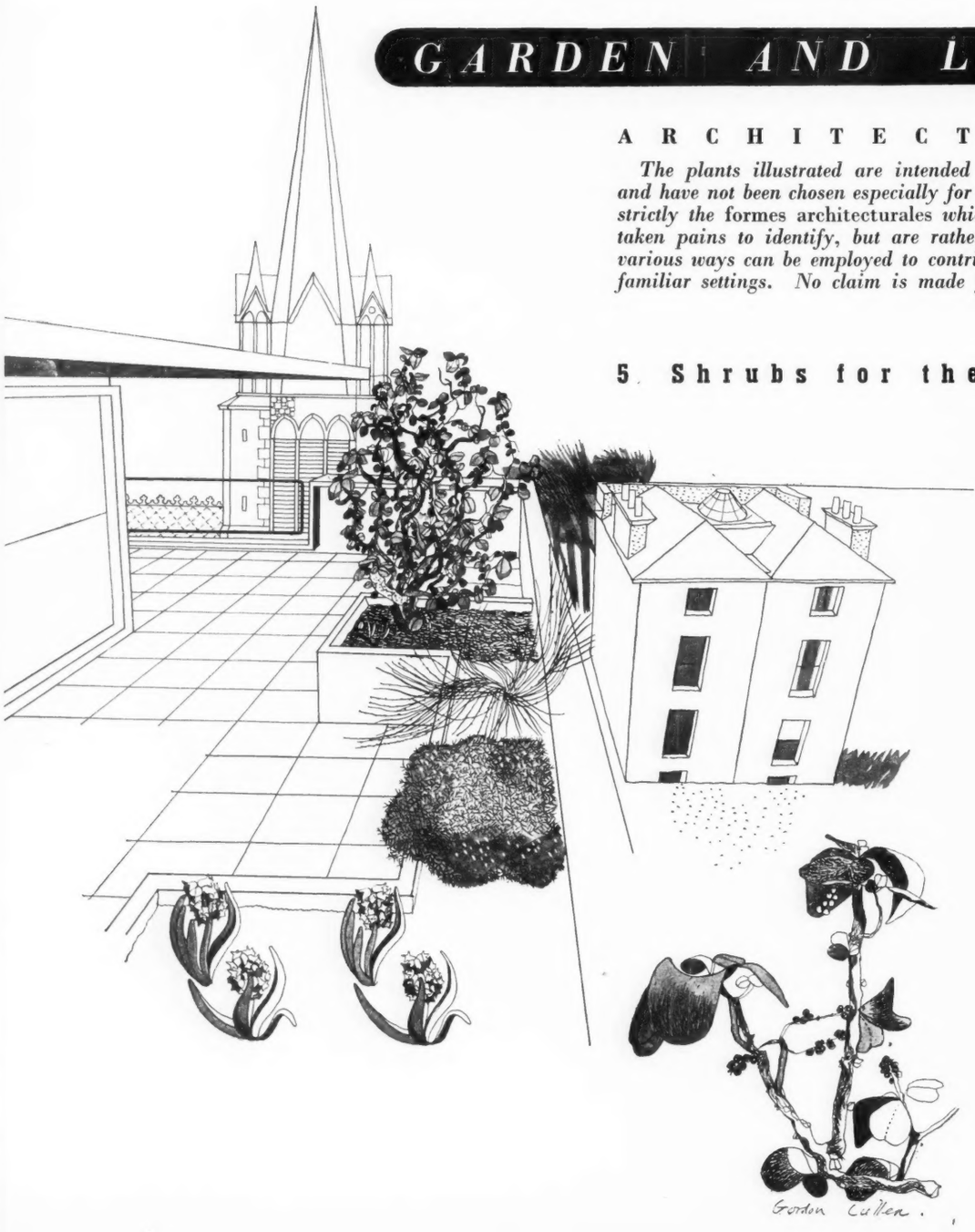


Photographs of the Crystal Palace taken in 1851, *in Hyde Park, at the Great Exhibition. Left, a general view of the building, showing the flat roof line, which was arched (as only the transept is in the photograph) over its whole extent when the building was later re-erected on Sydenham Hill. Right, an interior detail of one of the galleries, showing the cast-iron column and girder construction. See also the preceding page and the frontispiece to this issue.*

GARDEN AND LANDSCAPE

ARCHITECTS' PLANTS

The plants illustrated are intended as examples of useful structural material and have not been chosen especially for their interest when in flower. Nor are they strictly the formes architecturales ***which M. Correvon, the Swiss plantsman, has taken pains to identify, but are rather a selection from those subjects which in various ways can be employed to contribute to the shape or atmosphere of certain familiar settings. No claim is made for the botanical accuracy of the sketches.***



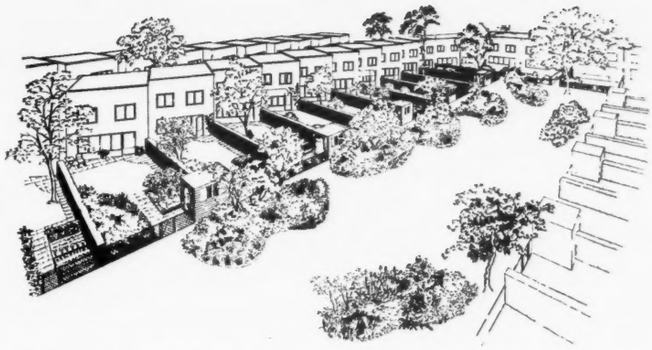
5 Shrubs for the Roof Garden

Ligustrum coriaceum (Japanese privet); *Cytisus albus* (White Spanish Broom); *Genista hispanica* (Spanish Gorse).

Although there are many lesser plants which will thrive on roof gardens, the majority of shrubs do not like the usual dry conditions and restricted root room of the average soil container in such situations. Those illustrated are three which will grow in about fifteen inches of soil in exposed positions, if adequate drainage and a good compost is provided.

The stiffly-erect shrub in the background of the sketch (and inset) is a stunted garden form of the Japanese privet discovered by Robert Fortune. It has thick leathery leaves and is hardier than some of the Oriental Privets, the plant illustrated having withstood at least one cold winter in its present position. It stands in rugged contrast to the next plant, which is the White Spanish Broom, whose whip-like growth will spread for many feet. This plant is the only really hardy broom with white flowers, and its roots do not rob those of other plants . . . a point to be considered when small containers are used. A stake is necessary for the main stem in the early stages of growth.

The close growing spiny plant in the foreground is the yellow flowered Spanish gorse, which forms spreading dark green hummocks in the minimum of soil and under dry conditions. It flowers profusely in early summer if given a position in full sun.



Those who saw the "All-Europe" House designed by Elizabeth Denby and shown at the Ideal Home Exhibition, may have speculated as to its probable use in ultimate terrace form. The above sketch shows how the terraces could be arranged to provide the maximum benefits from the garden point of view. Their outstanding advantage is that these houses can be built at the relatively high density of twenty to the acre and still provide gardens forty feet in length (which is usually enough for the average family to look after) together with community strips of green. The latter would be of value for play and rest gardens, preserving the garden area proper for intensive horticultural use. Garden layout by Christopher Tunnard. Drawing by H. F. Clark.

GARDEN BOOKS

DISCRIMINATE PLANTING

Why do expensive, difficult and unrewarding plants get more than their fair share of attention in the English garden? Perhaps because in this country it is easy to produce results, and plants cannot be valued for their virtues but for their capriciousness. Away from these moisture-hung islands, in places scorched by sun and cracked with frost, we find a different attitude among horticulturalists—an appreciation of plants with accommodating ways. Here, there are far too many "common" plants—for that is what the word has come to mean among those who cultivate the soil for pleasure.

In addition to the cachet which goes with the ability to coax flowers from wayward introductions, esoteric tastes in plants are fostered by the horticultural trades and by plant breeders in general. We may bless them for producing stringless beans and seedless tomatoes, but the striving after a colour approaching that of red lead in flowering plums, the flagrant and scentless modern rose, the yellow sweet pea!—are these perverse objectives demanded by the average gardener? Sometimes, it is true, these hybrids are surprisingly successful—the pink delphinium is a major triumph—but more often they lose in grace what is gained in size, or in character what is gained in vigour. Often vigour is lost as well, but that is all for the good of the trade, or a section of it, for there are, of course, nurserymen who turn the modern science of plant genetics to good account and distribute a beneficial selection of the collected species which flow into this country every year. These are supplied to the connoisseurs, who are in full retreat from the monstrosities bred in the name of trade. Among these people, plants of botanical, sentimental and literary interest are likely to hold the field.

It is from this quarter that enlightenment will one day come to the bewildered small-holder who now plants what is thrust upon him. For the connoisseurs, as two recent books show*, are beginning to put forward a case for the appreciation of form. This is a welcome revival of an old standard of taste. Gardening is not just a matter of growing flowers—a fact which designers have been pointing out for years—and the flower garden is not sufficient to satisfy sensitive [illegible]s. Habits of growth have become familiar and people are [illegible]ming to look at plants in the round, as the Japanese have since the days of King Stephen.

These two writers set about cultivating the sense of form in different ways. Mr. Honey would have us grow all kinds of well-chosen plants; Mr. Haworth-Booth would restrict us to one class. It may also be said that the former adopts the attitude of the connoisseur, while the latter writes more especially for the puzzled owner who wants a garden rather than an experimental plot. The *Flowering Shrub Garden* attempts to make gardening simpler without making it dull. Among the mass of shrubs which have not been spoiled by the hybridist there is enough material to satisfy anyone's taste; by selecting the best and planting with care the gardener makes his subsequent work a pleasure, for shrubs and trees, as a whole, require less labour in upkeep than any other class of plants. The architectural element is always to the fore, and

* *Gardening Heresies and Devotions.* By William Bowyer Honey (London: Faber and Faber, Price 10s. 6d.); and *The Flowering Shrub Garden.* By Michael Haworth-Booth (London: Country Life. Price 10s. 6d.).

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PAUL NASH has made the following observations about the above photographs, which were taken by himself: "The accompanying 'collages' demonstrate a new use for the Object, particularly the Found Object (*l'objet trouvé* of surrealist invention). The Found Object may not be *any* object. It must possess a personality *equivalent* to that of a work of art. The examples here are of natural Found Objects. Viewed from the altitude of a man standing erect, these objects may appear insignificant. But seen on the normal eye level of the rock gardener they will appear in appropriate relation to their surroundings. Some of these objects may scare away ants."

Their descriptions are: 1 and 2, shale object and vitreous object in rock garden. 3, group of objects for the open air, and "Desert Bird." 4, stone object on pebble pavement.

FOUND SCULPTURE

although Mr. Haworth-Booth would rather look on bosky enfilades than on "buildings, roads, factories, pylons or cables," he should know that his own designing problems and the architect's have very much in common. It is not always the architect's fault that the gardener is sometimes able to solve them more successfully.

Mr. Honey's fervours are only moderately heretical, but he stands firm against most aspects of trade hybridization, colour crudities, worship of size and the insensate doubling of flowers. His discrimination against the delightful double snowdrop one may suppose to be a matter of taste, which, he says, is proverbially not worth arguing about. Presumably, too, he would exclude Victorian florist flowers with their multiplicity of petals. He scorns the monstrous artificiality of the rock garden, vapourings over plants which belong to the boudoir rather than to the border, art shades, and the expense and the unnaturalness of gardens devoted to herbaceous plants alone. He admires well-grown vegetables, curious conifers and bamboos, gourds, fruit blossom, old-fashioned tulips, vines, thorns and crab apples and other rather neglected plants, and often gives excellent information on their culture. He says, too, that garden design may be discussed under the simple headings, "variety and repose." That is indeed possible as voluminous eighteenth-century writers discovered.

CHRISTOPHER TUNNARD

A contrast in housing at the beginning of last century, from "Your House and Mine," reviewed on this page: top, a terrace in Cheltenham: the last phase of Classical Architecture. Bottom, an industrial slum, in reaction from which the Garden City movement was initiated.

BOOKS

The Townsman's Country

YOUR HOUSE AND MINE. By Geoffrey Boumphrey. London: Allen & Unwin. Price 15s. net.

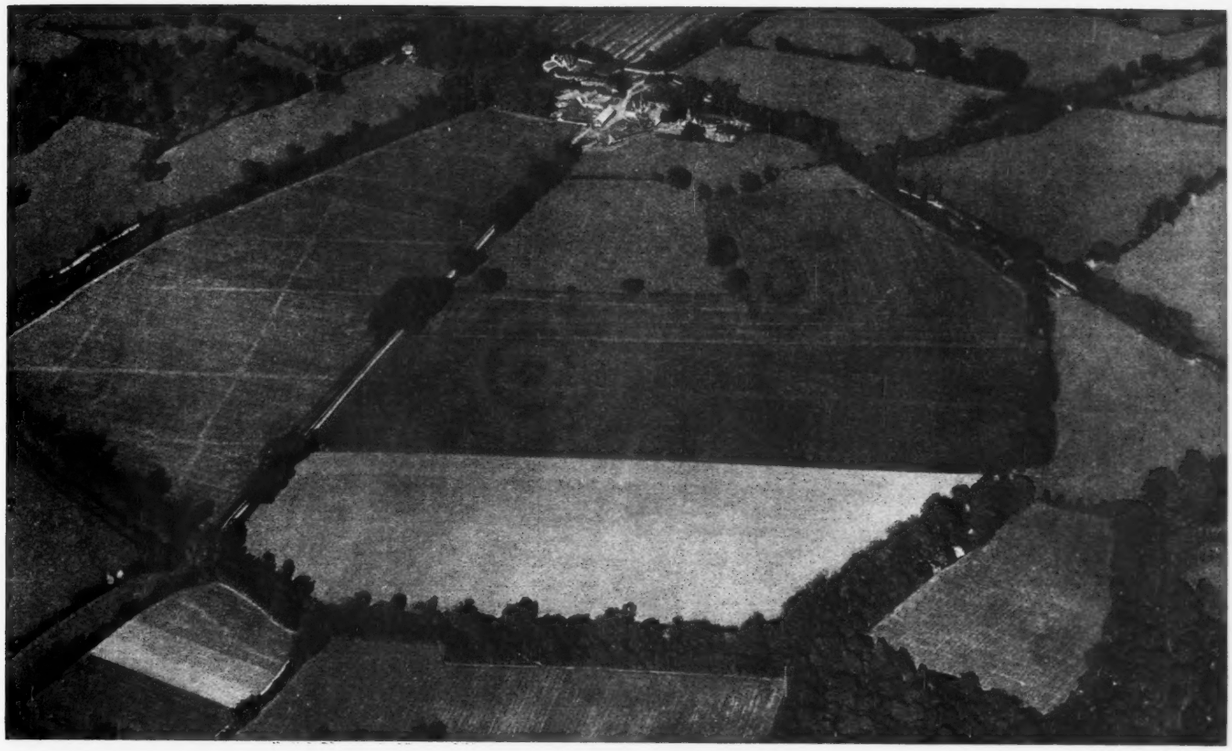
"GOD made the country but man made the town" propounded William Cowper a century and a half ago, and this is still one of our most widely accepted fallacies. People take the English landscape for granted just like the weather, and assume that the one has been fixed for as long as the other has been variable. That things are happening now to change the countryside, and change it for the worse, from æsthetic as well as economic points of view, is becoming more and more widely realized; but, owing to the almost universal ignorance of our social history, official action is still misguided, and public criticism ineffectual.

This book is a fairly elementary but extremely well-arranged resumé of the situation, tracing the evolution of social life from holes in the ground to—no, not holes in the ground, because the author is planning for peace, and A.R.P. has no part in this book—to the towering and the sprawling cities of today. The point is made throughout, that true beauty has never been achieved except when men successfully built what suited them, with all the materials and knowledge then at their disposal. And by learning how, during the centuries, these men built their houses, we may see better what our own houses are, and what they might be. The fatal sentimentality of admiring the old just because it is old will evaporate in face of knowledge. Mr. Boumphrey says, with regard to such expedients as coal fires, pitched roofs, panelling and small-pane windows, all which have been superseded by the technical inventions of the last hundred years, "to copy the past is to deny progress, and to deny progress is not to remain stationary but to lose ground."

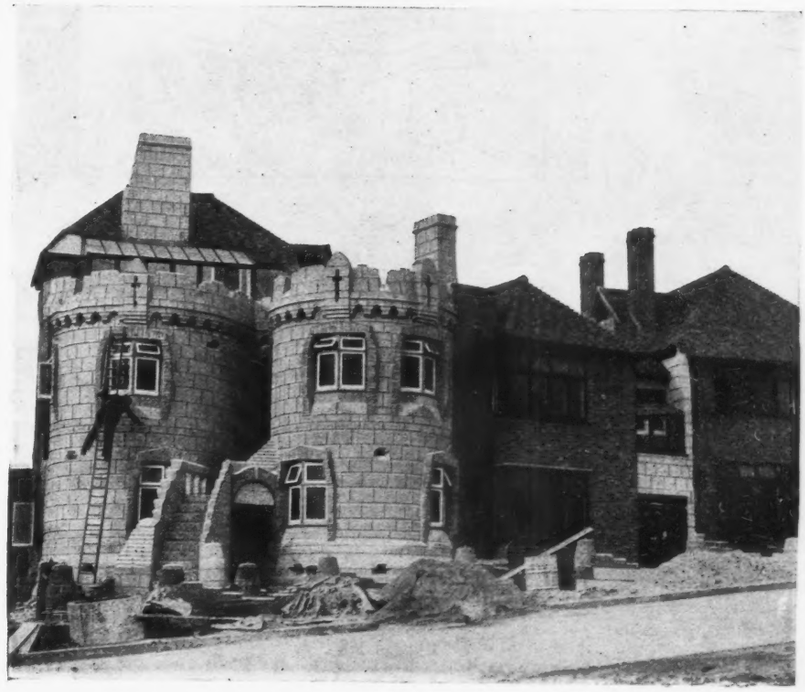
Along with the houses, Mr. Boumphrey describes the history of the countryside. There are two main periods which have left their marks on the face of England, the first with green, and the second with black, fingers. The English countryside, more perhaps than any other in the world, was designed for views. The clumps of elms, beeches and oaks, so familiar and typical, did not grow where they do by accident, but were carefully planted in the early eighteenth century. In 1664 John Evelyn, diarist, published "Sylva," in which he advocated the widespread planting of timber, not only for our navy, but for looks. Not much was done until about fifty year later, when the inclosure laws were passed, and great areas of the common land (about a quarter of the total area of England, it has been estimated) were hedged in to become the fields we know today. Planting was carried out by the squires all over the country, not in forests or plantations, but in small clumps at calculated points, imitating the paintings of Rosa, Claude and Poussin. As no one would see the fruits of this work, or profit by it for several generations, this was an interesting example of artistic altruism which the cynics have had some difficulty in explaining away. As might be expected, this, too, was perhaps our greatest period of town-planning, as the squares and crescents of Bath, Buxton, Harrogate, Cheltenham, Bloomsbury, and Edinburgh New Town still witness.

Incidentally, Mr. Boumphrey perpetuates the fallacy of supposing that Wren's plan for rebuilding London after the Great Fire was practicable. It would be heartrending if it was really contemporary shortsightedness and red tape that blocked it; but, as Wren's biographer Webb asks: How could a million people be temporarily housed for the time that would have been needed for the ambitious rebuilding, leaving out little things like boundary legislation, razing foundations, relaying water-conduits, etc.?

The second period affecting the face of England was that of the Industrial Revolution, when a part of the country was, for the first time, called Black because it *was* black. The factory owners built not towns, but rows of sheds for their workers to sleep in, and, to quote Mr. Osbert Lancaster, "in order that the humble householders might recall the country villages from which so many of them



Above, an aerial view of Silchester, near Reading. It was the site of an important Roman settlement and from the air the grid plan of the Roman streets can still be seen through the crops. Right, a hardly believable example of make believe in contemporary architecture: a suburban house on the outskirts of London. Both illustrations are from "Your House and Mine."



had come, the streets were considerately left unpaved, and the drainage system was made to conform to the primitive models to which they were accustomed." These evils did not go unnoticed by contemporaries, and ideal factory-town-planning schemes were, in fact, produced by Robert Owen in 1816, and by Titus Salt and James Silk Buckingham both before 1850. But the black fingers worked on. And the result of confusing their disgusting dormitories with towns is that many working people today still do not know what a town should be. The idea of a town being good to live in, a centre for recreation as well as the place to work in, is unfamiliar.

To change this is our immediate problem. When the Victorian ruling classes as a whole realized how ugly the towns were, instead of saying: "Let us make them beautiful," they said: "Let us get out and build in the country." So began the process of "hugging the country to death."

Mr. Boumphrey's last chapters show clearly the illogicality of building outwards, whether in ribbon development, or Garden Cities (more smoke, more fertile market-garden land destroyed, more tiresome travelling for the workers, fewer civic amenities, and more road deaths), and the logicality of building up. The future is in the air.

"Your House and Mine" is a history book written throughout from a constructive and healthily unsentimental viewpoint, and its usefulness is enhanced by no less than a hundred and eighty-six apt and well-printed illustrations. The only aspect of its subject undealt with is the machinery by which reforms can be carried out, and a book or pamphlet by Mr. Boumphrey on this vital subject would be sure of a warm welcome.

RUARI McLEAN

Shelter

PLANNED A.R.P. By Tecton. London: The Architectural Press. Price 5s. net.

A.R.P. is quite literally a matter of life and death. Hence it raises a good deal of emotion, and is generally discussed as uncritically as "The Facts of Life" or the question of survival after death. The book before us contains some honest qualitative thinking. It is entirely concerned with shelter from explosive bombs, though incidentally the main type of shelter recommended is fully gas-proof. For most of us A.R.P. means organization—or lack of it. And evacuation, at least, must be organized on a national scale. But the experience of Spain and China has shown that real A.R.P. is 75 per cent. engineering and 25 per cent. organization.

Here we have by far the best commentary on the engineering aspect so far written. To measure the degree of protection afforded, the authors calculate what they call the danger volume for a given type of bomb, first in the open, and second for a given type of shelter. This "volume" is the danger of being killed integrated over an area.

Thus for a 100 kg. bomb the probability of death is supposed to be unity within a radius of 104 feet, falling practically to zero at 350 feet. The dimensions of the danger "volume" therefore are those of an area (in this case about 40,000 square feet).

The corresponding "volume" for a shelter can most readily be reduced by lateral protection. Thus an Anderson steel shelter gives fairly good lateral protection, but none whatever from bombs falling vertically on it. The "danger coefficient" for any structure is the ratio of its danger volume to that of an unprotected man. And as this varies for different types of bomb, a particular distribution of bomb weights is assumed, most of them being 50 or 100 kg., and a weighted mean value calculated. Whatever doubts may exist as to detail, this method is correct in principle. But one point is omitted. An attacker would take cognizance of the nature of the shelters in an area attacked. A suburb with steel shelters would be attacked with numerous light bombs weighing 25 kg. or less, and a town with deep shelters with heavy bombs weighing 250 kg. and upwards. However this probably makes no very great difference to the figures arrived at.

A very valuable section deals with surface shelters such as trenches. It is shown that a shelter consisting of passages separated by 6 in. concrete walls and covered by a 6 in. concrete roof is safer and cheaper than a trench system, while sheltering more than twice as many people per acre. Such shelters could readily be incorporated in the basements of new buildings.

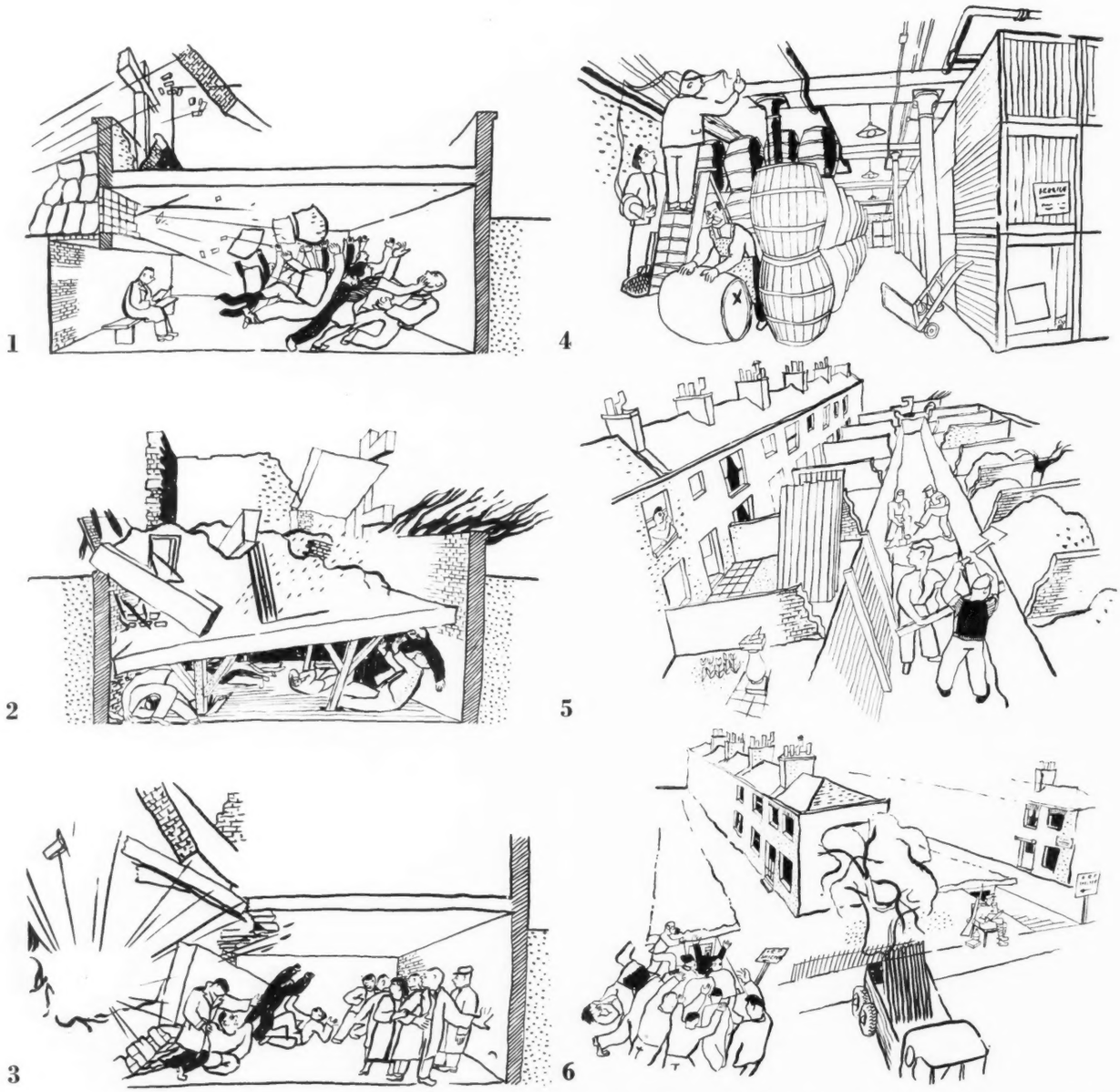
Next follows a discussion of existing basements, which are condemned as shelters on two grounds. In the first place they cannot be adequately propped. And secondly there is generally no lateral protection against bombs with delayed action fuses falling into the basement. It is noteworthy that government apologists have made no effort to deal with this second criticism.

For crowded areas real vertical protection is needed. Tunnels are dismissed, except in special cases, for two reasons. The first, namely, shortage of skilled workers, has some validity, though the experience of the tunnelling companies in the last war shows that miners can readily be trained for this work. The second is that of cost. The authors put this at £50 per yard, though 7 ft. sewers for West Middlesex cost £25 per yard.* And the A.A.S.T.A. committee reckon the cost per head at about £11, as compared with about £25 in the book before us. This is a very serious discrepancy which can and should be thrashed out. The authors say very little about tunnels in rock, which seem to provide the ideal form of shelter for Leeds and many parts of Birmingham and Liverpool; and indeed most writers on A.R.P. seem to concentrate rather unduly on London.

Finally we come to the account of the famous Finsbury shelter designed by the authors and Mr. Arup. This is essentially a spiral concrete ramp protected by a double roof, and holding 7,600 people or more. I have no doubt at all as to its efficiency, particularly at night, when it would not be completely full, and even a one or two-ton bomb cracking the roof would cause no casualties among people on the lower floors. As a layman I cannot of course judge whether the cost of £10 10*s.* per head (including ventilation, lighting, etc.) is correct.* But as the authors will be ruined if the plan is allowed, and the cost underestimated,

* Journ. Inst. Civ. Eng. 1937.

** In their reply to official criticisms the authors now state that a contractor is willing to make a shelter at 10 per cent. less than their estimated cost.*



Messrs. Tecton's book, "Planned A.R.P.", reviewed here by Professor J. B. S. Haldane, is illustrated by a series of drawings by T. G. Cullen, which formed part of the recent A.R.P. exhibition in Finsbury Town Hall. The drawings accompany the authors' analysis of the advantages and disadvantages of the various forms of protection. A selection of these drawings is reproduced above. **1**, **2** *and* **3**, *show some dangers of using basements as shelters.* **1**, *because the side walls are not designed to withstand shock;* **2**, *because of the danger of collapse of the building above in spite of strutting;* **3**, *because basements, with their windows at street level, are especially exposed to blast from bombs falling outside;* **4** *and* **5** *show two practical problems: interference with peace-time use of basements and the destruction of private gardens which in crowded areas are often the only space for trenches;* **6** *shows the difficulty of controlling a scattered trench system;* **7**, **8**, *and* **9** *show the three principal*

I have some faith in it! It is claimed that the structure would begin to be useful after one month, and would be completed in 8 months.

Smaller shelters of the same type, to hold 830 people and upwards, would cost considerably more, and be useless for car parks. However, the large type is only suited for densely populated areas where 7,000 people can be found within a 350-yard radius. There follows a most interesting account of the survey of Finsbury which led to the scheme, and which may be of great value to other authorities.

Throughout the authors have been handicapped by lack of vitally important information. If our government does not possess it, that is a scandal. If they do, but keep it secret, that is a scandal too. It appears only too probable that the data needed for designing shelters will first be furnished by actual raids on Britain in the near future.

No architect or municipal authority can possibly afford to neglect this book, which is beautifully got up, amply illustrated, and amazingly cheap at its price.

J. B. S. HALDANE

Standard Design

THE FLAT BOOK. By Martin and Speight. London: Heinemann. Price 5s. net.

It was recently suggested that it might be a salutary thing to publish occasionally in the art papers large photographs of the average villa living-room. It is easy to forget in our arguments over form and design how second-rate, ill-considered, tawdry and confused is the interior of the ordinary man's house—a house which never seems to be visited by the editors and compilers of the usual books on interior decoration. How familiar and how unreal are the latter's illustrations of satin woods and polished metals, of quilted fabrics, furry carpets and gleaming glass. It is not really the author's fault. Like the exhibition promoter, he has to concentrate on the smart and "stunt" design, without whose sensational appeal the public's interest will not apparently be tempted. The trouble with such books and exhibitions is that they tend to obscure the existence of well-designed stuff which has no publicity value.

Efforts have been made, of course, to grapple with this problem on more practical lines, among them the D.I.A. magazine, *Design for Today*, Mr. Bertram's talks on the B.B.C., and the ARCHITECTURAL REVIEW's number of two years ago dealing with domestic equipment. Now comes *The Flat Book*, easily the best and most sensible book on the subject yet published, and with its appearance vanishes the last excuse of the man who complains that good design is necessarily expensive and anyway he doesn't know where to go for it.

The book is simply arranged. After a short introduction it is divided into two main sections, which are subdivided into various chapters on colour, furnishing, lighting, equipment, etc. Each chapter consists of a short survey of its subject and several pages of photographs of the best-designed examples available on the market. Each object is fully described. We are told who it is made by and how much it costs. There are nearly five hundred of these photographs. The collection and editing must have been a tremendous task and it could hardly have been done better. The text at times may seem a little obvious, but it is the obviousness of common sense.

The best thing about the book is its completeness. The next best thing about it is its price. It is hard to guess how the publishers and the Shenval Press could have produced a book so lavishly illustrated and of such quality for five shillings. But there it is, in its gay "shocking pink" cover, compact, comprehensive and invaluable. No flat should be without it.

HUGH CASSON

The Military Art

CASTLES: A SHORT HISTORY OF FORTIFICATION FROM 1600 B.C. to A.D. 1600. By Sidney Toy. London: Heinemann. Price 25s. net.

Castles, from the earliest days of childhood when they were no more than heaps of sand on the beaches of Frinton or Bognor, play an important part in the lives and imaginations of most of us. There is a perennial fascination in climbing over the ruins of some rocky fortress or exploring the horrid dungeons of an ancient keep; and whether it is a mound of earth or a full-blown Warwick or Raby, the pleasure a castle gives is just the same. It is strange, too, that it does not seem to matter where they are; castles in Spain or the Holy Land, in Babylon or the Welsh Marches, are all filled with an equal glamour. Perhaps it is the conception of war carried on by human beings, the tradition (in the manner of Sir Walter Scott) of chivalrous knight-errantry, that makes such a strong appeal; perhaps it is just an escapist dream like so much of modern life. Whatever its cause, this attraction for castles has come to be a permanent part of our make-up.

The range and proficiency of castle-builders was amazing, yet in time they were outstripped by the besiegers, the men with machines, whose towers and penthouses resisted all the onslaughts of oil and lead and fire, so that even the strongest masonry eventually collapsed. And with the decay of their effectiveness in war and, ultimately, the passing of the age when it was possible to live in them, these romantic strongholds ceased to have any use and, finally, degenerated into an old age dedicated to tourists and antiquaries.

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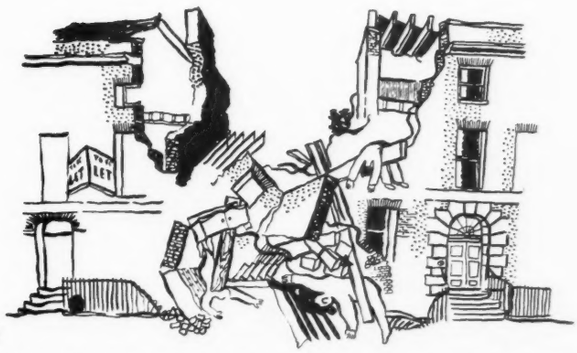

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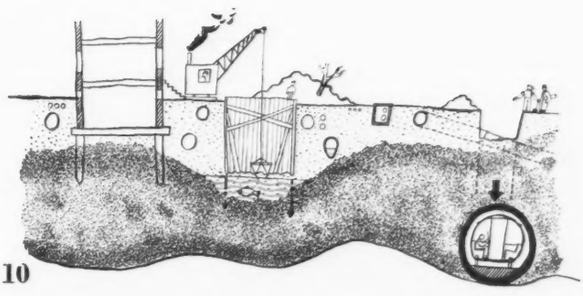

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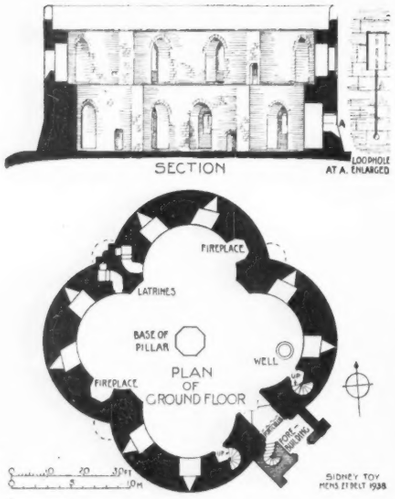
effects of bombing: blast, splinters and falling debris; 10 suggests the difficulty of building underground shelters (in view of the many services, etc., that already exist underground) without a detailed survey such as Tecton performed for Finsbury.



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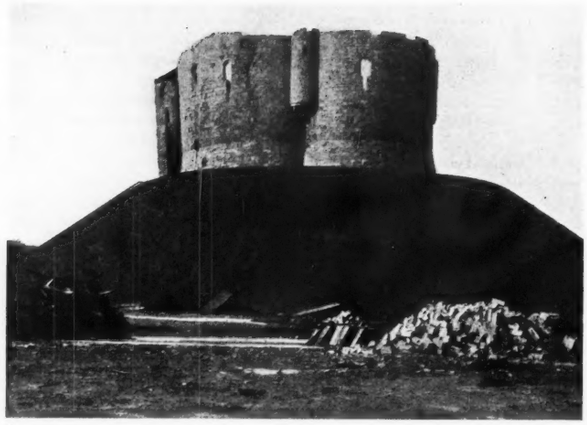

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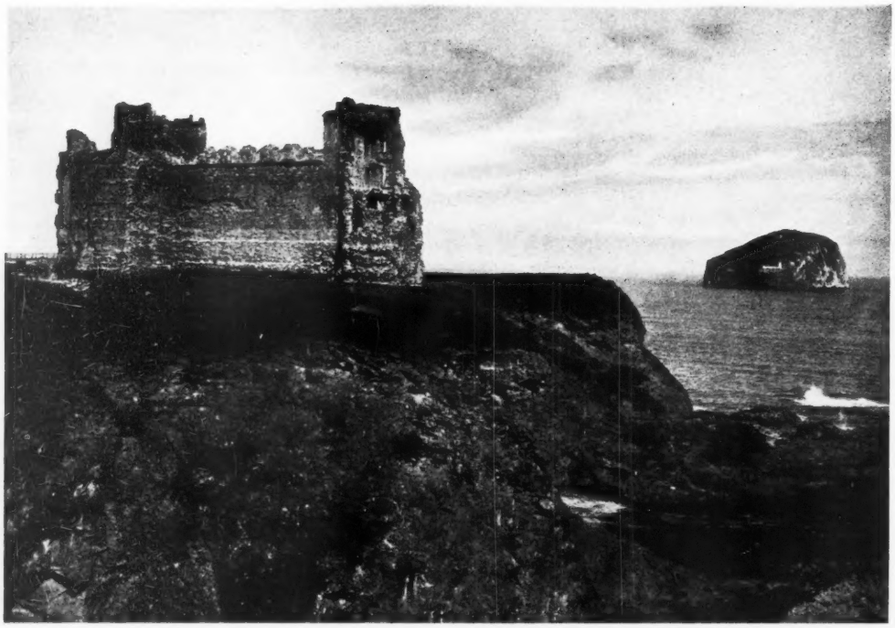

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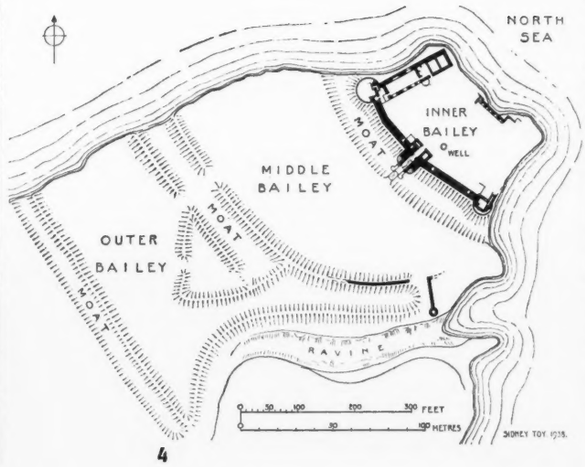

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1 and 2, plan, section and north-east view of the quatre-foil shaped keep of Clifford's Tower, York : thirteenth century. 3 and 4, south-east view and plan of Tantallon Castle, East Lothian : third quarter of the fourteenth century. From "Castles," by Sidney Toy.

Now, when even such handsomely castellated buildings as Holloway, such pleasantly rural retreats as East Cowes Castle are uninhabited, when Pentonvilles and Balmorals are no longer being built, it is becoming more and more a melancholy excursion into the past to explore and sketch and photograph castles where the tread of feet is no longer a military measure and the clank of metal is only the sound of coppers dropping into the hand of the guide.

But to those of us who do our sightseeing by ourselves, or follow a guide whose knowledge is as scanty as our own, the vicarious pleasure of being shown the genuine relics of those heroes of the Victorian age can be considerably augmented by a little of that specialist erudition which it is so helpful to dispense to our fellow-travellers (and so unpleasant to hear from others). Indeed, the more one goes into the subject the more seductive it becomes.

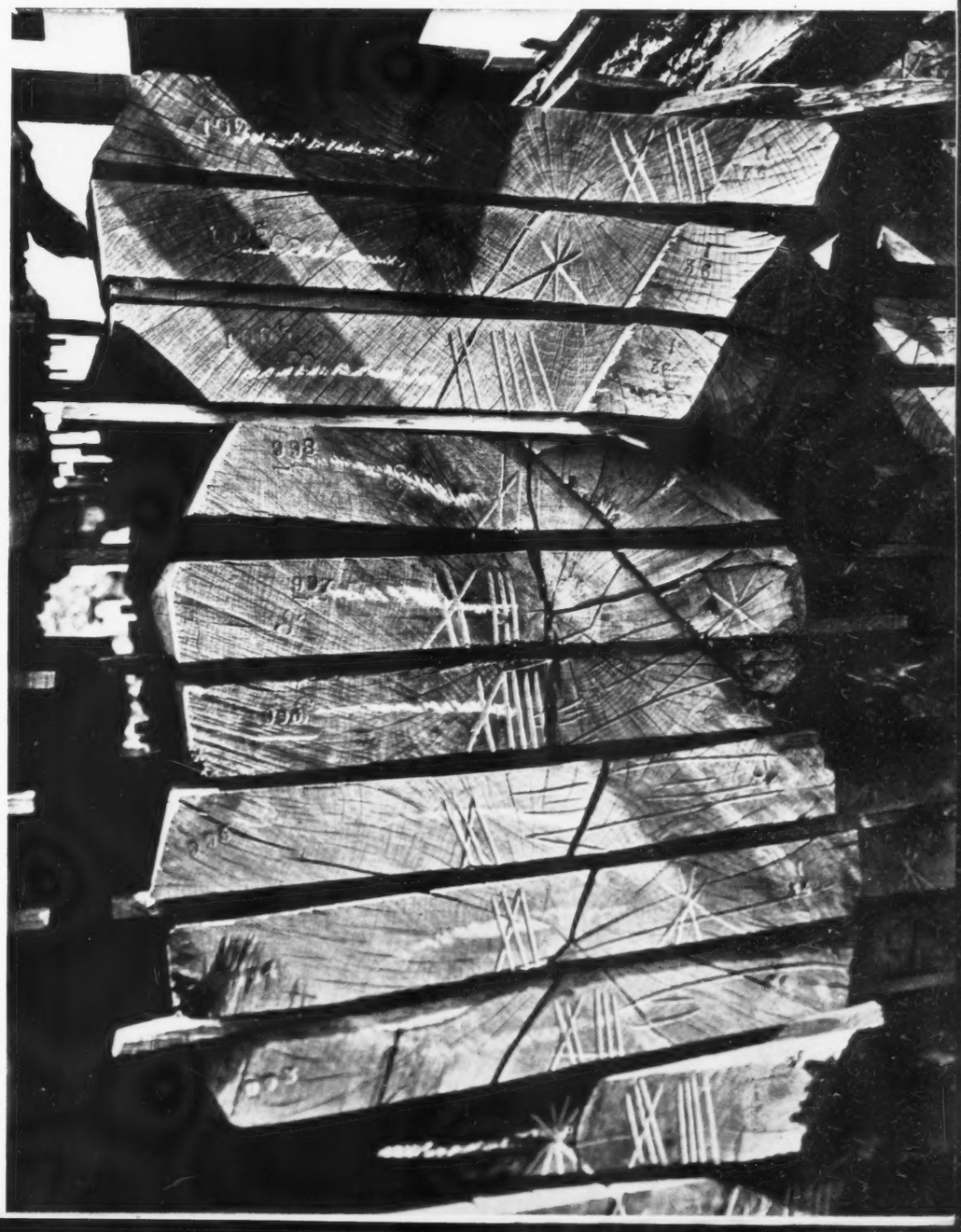
To such people Sidney Toy's book is an ideal gleaning ground for odd pieces of information; in it can be found a description of the mechanical ingenuity of Philip of Macedonia, the Herods or Tiberius; stories of Constantinople, Babylon and Cairo, or a relation of the fortifications of Troyenstein and the Bastille. Though highly technical it is also so full of the pleasantest kind of instruction that one cannot imagine anyone to whom the book could not give some form of delight, but most of all its usefulness would be to serious students of military history, like T. E. Lawrence, who cycled, pencil and camera in hand, all over France, or trudged on foot through Palestine in search of Crusader Castles.

In range it stretches from Thebes and the castles of pre-Christian Britain to the coastal forts of the time of Henry VIII, and in detail from fireplaces to siege operations. It is a book of unusual learning, and it is pertinent, too, at a time when one looks forward without pleasure to the prospect of the castles, concrete and steel, against air attack, that may soon be an Englishman's home.

SELWYN POWELL

SOLID TIMBER

This is the fifth of a series of supplements each dealing with a different material. Emphasis is laid on the decorative possibilities, but the supplements are also planned as a continuation of the special issues on materials that have appeared in THE ARCHITECTURAL REVIEW during recent years.



RIGHT, English oak planks seasoning. Separated by sticks to allow free circulation of air, planks are dried to a maximum of 20% moisture content in the open air; where further drying is needed, kilns are used; English oak seasons for about one year per inch thickness of plank. The end-markings shown in the illustration refer to dates of felling and converting into planks.

SOLID TIMBER

A survey by N. C. Stoneham

It is significant that, in the age of concrete, steel and glass, more timber houses are being built than at any other time in the past three hundred years. Economics have dictated the practice; sentiment, subconsciously born of tradition, has perhaps encouraged the dictation. Man learnt to use and work in wood so long ago that its use, as a domestic medium, has become almost second nature. One might be tempted to think that all its potentialities were explored long since, yet, within the past few years, the use of veneers to cover large plain surfaces has opened up an entirely new field in the employment of timber, and even within the last few months, new techniques, for instance, of laying block flooring with sound-absorbent qualities equal to that of rubber and cork, have been marketed. It is indeed unlikely that timber will ever be outmoded for architectural purposes. Whatever may happen in the future, timber today holds an important place in building economy. Its use, and manner of use, is conditioned by the purposes of building and finance together with the predelictions of the occupier, which may or may not be tempered by the sentiment of tradition. Its use in solid or structural form will tend to be dictated more by the two first considerations; its employment in veneer, as a decorative feature, will depend more on the last. In this supplement the emphasis is laid on solid timber, though both veneer and plywood are inevitably touched on in the course of the survey. Particular prominence has been given to English timbers, since it is, rather remarkably, the native product that seems least known in present-day design in this country. In view of the importance in modern design of the plywoods, it is proposed to devote a further supplement exclusively to this aspect of Timber.

THE HISTORICAL PERSPECTIVE

The form and tradition of building have, up to the present day, been dictated by the economics of availability, both in quantity and in sizes of timber. After the Saxon era, the first English houses were of two kinds, stone for the larger; wattle-and-daub, with timber framing, for the smaller. With the increasing wealth of society and the growth of the middle classes in the towns, three classes of houses began to appear. The largest were still of stone, but the wattle-and-daub hovel expanded until it finally flowered in the half-timbered house. The fully timbered house never developed to any great degree until the coming of the mechanical saw, which made the cutting of thin planks an economic possibility; by this time native supplies had been so badly depleted that timber was imported from the Baltic. The hovel, the small half-timbered cote of the poorer classes, remained.

Bricks were first used as a substitute for "daub," to fill in the spaces between structural timbers. Until now the availability of suitable sizes to bear the requisite weights had decided the size and height of timber building.

As brick became more economical to use, the size of the exterior walls was no longer conditioned by the sizes of available timbers, but the size of the rooms was still dictated by the length of the floor bearers, except in cases where economic cost was of no importance. Thus, as social necessity and the economics of building conditioned the size of the exterior of the house, so did they condition the interior. Windows, doors, staircases and wall covering all reflected the prevailing needs of society tempered by the economics of the period.*

In considering the development of timber building, the logic of that development, in its reflection of the prevailing economy and needs of the society of the time, is at once apparent. Style and form has not tended to persist once its fundamental reason has passed. Today, both in Europe and in America, new processes are evolving, new forms in wood are being developed, that are beginning to emerge as a valuable, as well as an altogether human, contribution to contemporary architecture.

* For more detailed reading on this historical influence of timber, reference may be made to "The History of Everyday Things" series by C. H. B. and Marjorie Quennell, "Home Life in History" by John Gloag and C. Thompson Walker, "The Architecture of England" by Frederick Gibberd, and "Pillar to Post" by Osbert Lancaster.

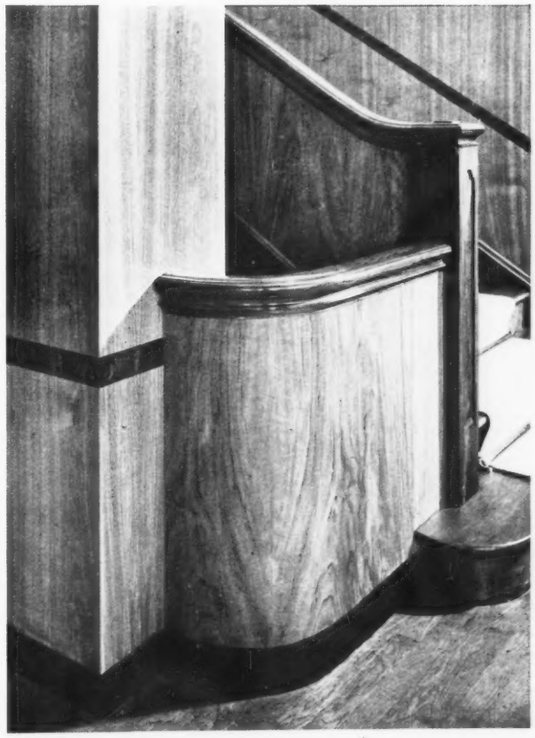
THE STAIR

THE PLANK has been sawn to size and is planed by machine. The grooves for the treads and risers are cut in the stringer by a rotar working to a metal template, giving speed and precision of execution.

JOGGLING, FIXING and FINISHING are essentially the work of the craftsman. Traditional skilled handicraft cannot be displaced by machinery once the assembly stage has been reached.

Above are shown two staircases in English oak, that on the left in the turned baluster tradition of the Elizabethan and Jacobean periods, from the Convent of the Sacred Heart, Dagenham. The example on the right combining the solid sweep of the woodwork with balustrading in wrought iron: house at Dedham, Suffolk, Davies and Knight, architects.

TREADS and RISERS are fixed and the nails are punched home. The stair is built in sections as the design allows.



THE NEWEL POST, an integral part of the stair, is secured. The balustrading is fixed after the stairs are in position.

The staircase example shown above is in an idiom owing less to tradition than the two preceding examples. Balustrading, whether of wood or metal, has disappeared to give way to the solid wooden side panel between handrail and stringer. The woods used here are light walnut with trim in dark walnut.

THE FINISHED JOB, even if of simple design is thus of considerable complexity in structural frame.

Staircases

The early stairway was of two types : the stone turret stair and the ladder. As the community expanded social intercourse tended to emphasize the importance of the upper floor rooms in the timber-framed house. The stair therefore developed from two distinct forms. The stone stair was imitated in wooden blocks and the ladder was expanded to make mounting easier. These two forms eventually merged into the hollow stair of treads and risers.

The evolution of the balustrade may be said to have followed similar lines. The first handrail was the rope slung round the side of the stone stair, which form was later often carved into the stone itself. When the developed ladder merged into the stone stair the wooden handrail was fitted to the side of the wall—a form logically returned to in modern concrete stair building—though it was more often supported by balustrading, to carry the weight of a body leaning against the rail and prevent it falling into the stairwell. With the discovery of the north country iron fields, and the more popular use of iron, the balustrading often came to be made in that medium, giving the required strength with more slender and æsthetic proportions. Present-day development is a logical outcome of these two forms. The excess of strength of both the earlier wooden and the 18th century iron balustrading, with the concomitant excess of weight, has been eliminated (also perhaps a lessening of the need to support the lurching bodies of inebriates), so that the wooden balustrade is now generally fined down to the more pleasing proportions of the wrought iron.

The handrail remains of a size to be conveniently grasped by the hand. The wreath is still cut by the hand and eye of the craftsman, even though, where several flights are to be constructed, all of exactly similar design, there is a tendency nowadays to cut the rail on a metal core or template.

THE HANDRAIL

A combination of machinework and craftwork is shown in the making of the wreath for a handrail to a concrete staircase. The initial stages of roughing out the block, originally executed almost entirely by visual judgment are now made on the bandsaw to templates. The metal core, shown in 4, is the key guide to the making of the wreath and is supplied by the architect.

1, matching template to forme

2, cutting the block

3, matching rough wreath to mould

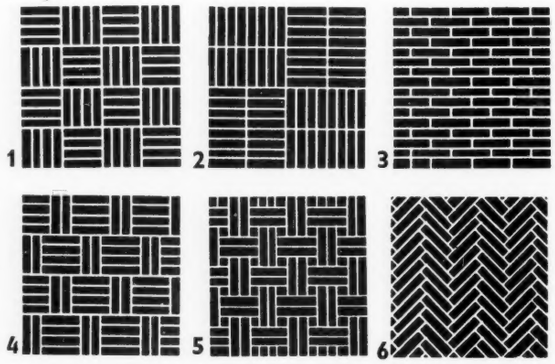
4, setting-up wreath on metal core

5, cut

2 Floors

The early wooden floor was laid with wide planks. Economy of labour with the handsaw was the deciding factor, and the timber used was dependant on local sylviculture, the commonest being oak, elm and beech. The discovery of the Americas and the Indies ushered in the commercial era, with its increased wealth, and therefore leisure, for the few. Wealth and leisure brought refinement in taste, and smoother floors were needed. Wealth and leisure and smooth flooring encouraged dancing, and the popularity of balls and masques demanded yet smoother floors, made of hardwood to eliminate the grain rise of the softwood timbers from the Baltic. But even wealth is subject to economic factors, and the ruinous cost of sawing narrow hardwood planks, together with the difficulty of obtaining adequate supplies owing to forest depletion, made some other type of flooring a necessity. Wood-block flooring, which could be made from off-cuts of hardwood timbers, supplied the need.

With importation of foreign hardwoods, however, augmenting the local supply, coupled with the invention of the mechanical saw, narrow strip hardwood flooring became an economic possibility.



1, the four-unit pattern of wood-block flooring. 2, the sixteen-unit. 3, the "bonded" design. 4, a combined four-unit and two-unit. 5, two-units with smaller-sized infilling block. 6, a traditional bonded form.

3 Doors

The door reflects society. The strong door, able to withstand assault, nail-studded to splinter battering-rams, passed with the less ordered civilization. Its passing brought the problem of creating a lighter door that would merely require to withstand the natural swelling and shrinking of wood exposed to atmosphere, without splitting. Narrow planks, nailed to crossbattens with vertical battens on the face to cover the edge joints, formed an early experiment. This form of construction, though allowing swelling to a certain extent, was too rigid and caused splitting of the planks on shrinking. The panel door was the logical outcome, since the panels, being fitted loose in the frame, could then move as much as they needed.

Society later forced another change. The "servant problem," together with a greater desire for hygienic cleanliness, created a demand for less dust-traps. The panel door collected dust and added to domestic labour. The flush door was made possible by the development of plywood.

As with doors, so with the door casing. The age of

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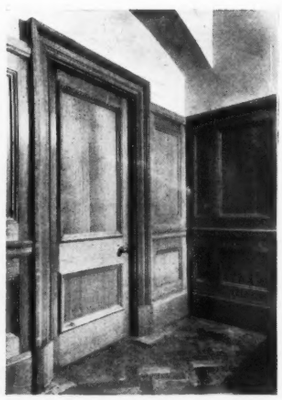
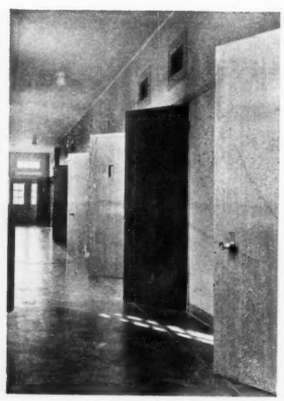




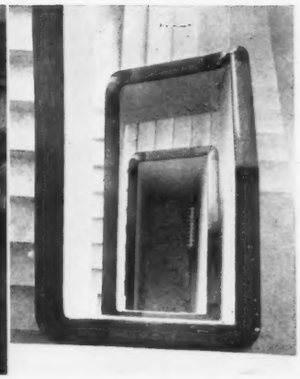
Above, left, a well-designed example of the "traditional" door with its heavy mouldings and "floating" panels which allow for the expansion and contraction of the units under the influence of the prevailing atmosphere, a solid door in English oak from Dagenham High School, John Stewart, architect. Centre, flush doors with oak veneer finishes, Runwill Mental Hospital, Elcock and Sutcliffe, architects. Right, the special purpose door, glazed two-way swing doors in polished mahogany from a recent R.A.F. Station. Architects' Department, Air Ministry, designers.

5, cutting the groove

6, rounding the hand-grip

7, moulding the rail

8, the completed wreath



9, the finished job in situ

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elegance, from Queen Anne to the Regency, brought grace to the lighter door. The heavy, solid door frame, conditioned by the door weight it had to carry, disappeared in the seventeenth century. The Classic revival, so expressive of the æsthetic thought of the period, brought the light, fluted wooden columns and pilasters supporting external doors, while the internal door was framed in mouldings of increasing refinement. A certain debasing of thought during the expansion of the Victorian era caused the door to lose its fineness. It became, together with its casing, heavy in feeling, often surrounded by a mass of heavy mouldings. Today, the feeling for clean lines and flush, dustless surfaces tends to banish the door-casing and architrave entirely, bringing into being the supremely simple unit—the flush door.

Left, special-purpose doors—a pair of sliding doors at a new R.A.F. Station. For doors of this size, the examples shown are 20 feet high, timber—lighter than ferrous metal, less expensive than aluminium alloy—is frequently the ideal solution.

4 Wall Covering

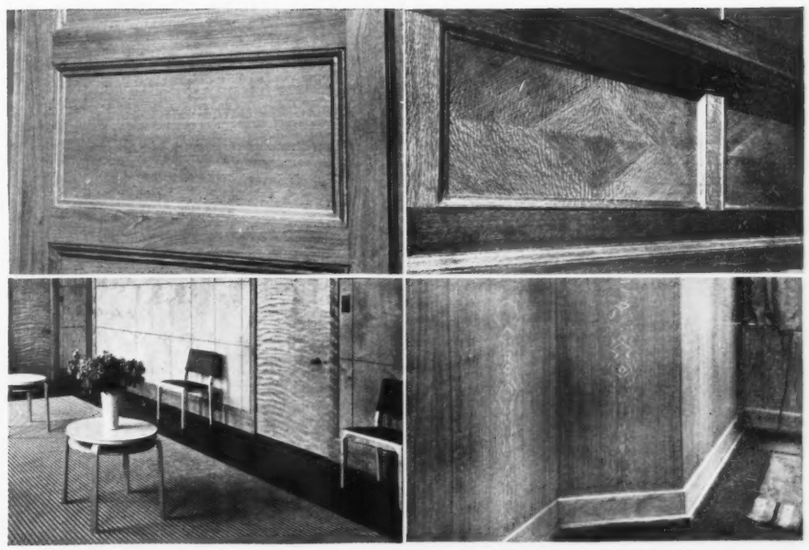
Wall coverings may be said to have originated when the walls of stone-built dwellings were covered with tapestries in the search for greater comfort. This form of cover, however, was expensive and transitory. A later cover was plaster, with or without the addition of mural painting. Later, panelling with planks of timber developed, a medium that was pleasing æsthetically, as well as permanent and warmth-retaining.

The timber-framed house, having already its tradition of wattle, or lath and plaster, naturally used its own plaster as a wall facing. Interior partition walls were of similar construction to that for exterior walls, or were built of overlapping boarding placed vertically or horizontally. These boards were sometimes moulded or chamfered on the edge. In other instances, the boards were edge-jointed, the joints being covered with thin battens or mouldings.

With the growing demand for architectural refinement in the shape of wood-covered walls, the consequent lessening in the relative amount of timber available made it necessary for panelling to be built-up.

Building-up was easily accomplished by widening the horizontal and vertical battens covering the edge joints, to form stiles, and using shorter lengths of boarding to form panels. The depth of the panel was at first conditioned by the width of the board, laid horizontally, thereby creating a tradition of unequal panelling which still persists to some extent, though later the panels themselves were often built up of two planks edge-joined. This building-up of panels is particularly noticeable in the examples of work in Baltic softwoods made during the eighteenth century.

Coming down to modern times, the invention of the mechanical veneer-cutter has now, of course, made possible the use of



The four examples of wall cover shown above illustrate the evolution of the wall panel from the original solid, framed type to the modern " over-all " use of flush plywood sheeting. Top, left, a solid panel, straight cut, in English oak. Top, right, a matched panel of quarter-cut English oak. Bottom, right, oak veneer flush panelling without stiles. Bottom, left, a modern finish with flush plywood sheets.

[continued from previous page]

such products as veneered plywoods, and panelling has quickly adapted itself to the new medium. The stiles of the solid timber type, however, are frequently allowed to remain to contain the plywood boards.

But the veneer-cutter tends to favour the use of the long leaves of veneers independently of stiles. By glueing the leaves to laminated board of size only regulated by the length of the leaf, large areas can be flush-covered. Design is contributed by the matching of the grain of the veneers or by the inlay of other veneers in the form of banding. All this being a perfectly logical development in the use of timber. It may, however, be condemned as illogical to use ply outside its medium—for instance, in imitation of stile panelling, where sheets of plywood are laid as if for a flush surfacing and stiles are arbitrarily tacked over them, having, in this use, no functional, but only a traditional, purpose.

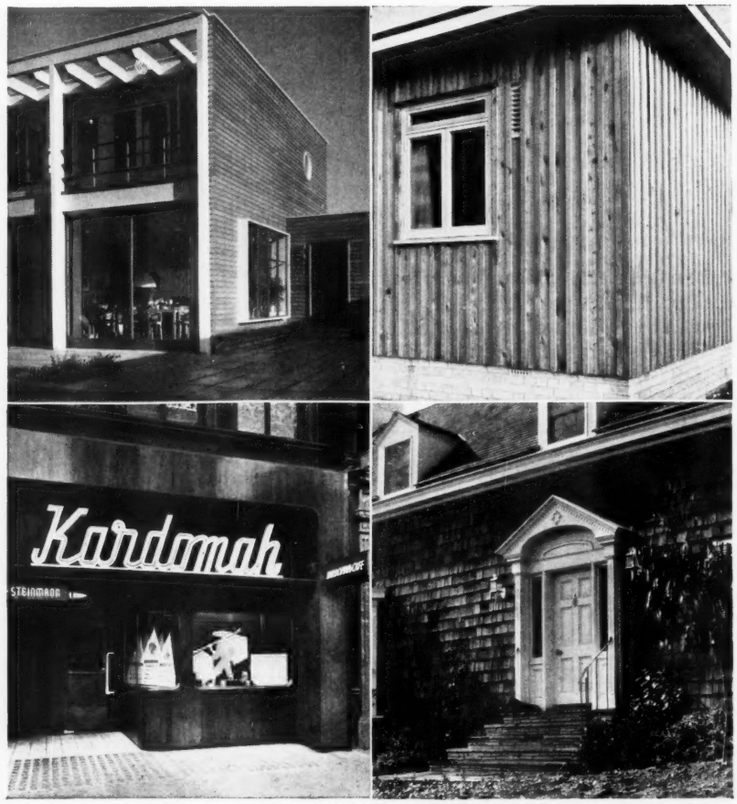
5 External Work

The economics of building have, to a large extent, displaced timber as a medium for the shell of a building. The development of the tall building, long before the present immense office and flat blocks, had outmoded the structural limitations of wood. But, together with the use of other media, has grown a reversion to wooden domestic buildings, based on similar economics and social needs that, in other cases, had militated against them.

The logical roof covering for timber houses is shingles. They can also be used much in the same way as tile or slate for wall covering. The first shingles were adze chips and in England were used in those parts of the country, notably Sussex, where oak was readily available. In America local woods were at first used, though with the discovery of western red cedar, which cleaves with more regular ease than other timbers, its use for this purpose logically displaced local industry. Shingles have three great advantages: 1, they are very light, thereby giving the minimum of thrust on the wall framing. 2, they are extremely good insulators against both heat and cold. 3, they weather to a very pleasant grey shade. They have one disadvantage. After a time alternate wetting and drying causes them to curl. All curling occasions replacement and, ultimately, reshingling of the roof. This is an expensive item.

In America, red cedar shingling is normally reckoned to last from 40 to 60 years without the need for re-roofing. Their length of life in England is as yet problematical since they are a comparatively recent innovation.

Contemporarily, almost the only other external use for structural timber is in imitation of such past forms of building as traditional half-timbering. Where this is done genuinely, using the method of structural carcassing, with trenail fastenings, it is not too reprehensible, though probably to be deplored if only on the grounds that from the point of view of design it is pure retrogression. There is nothing to be said against reverting to an older form of art, as an inspiration, and evolving a fresh art-form from it. This has been done frequently enough in architecture as well as in the other arts. But when retrogression to a past art-form is made purely for its own sake, nothing can be said to be indicated but degeneracy of feeling and the constipation of artistic initiative.



Four examples of external wall cover; top, left, the English tradition of horizontal weatherboarding—here in weathered cedar—in a design of thoroughly contemporary conception: house near Halland, Sussex, by Serge Chermayeff. Top, right, the Swedish tradition of vertical boarding with cover-fillets: house near Oxford, by David Booth. Bottom, right, an American tradition of red cedar wall shingles: house at Los Angeles, by John Byers. Bottom, left, a flush timber finish made possible by veneer, a teak-fronted café entrance by Misha Black and Walter Landauer.

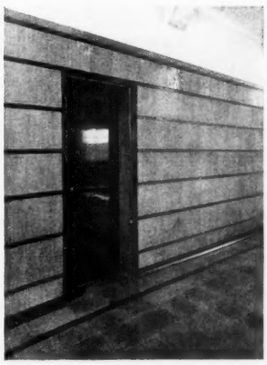
6 Decoration and Fittings

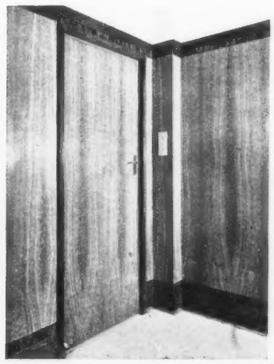
Timber is a plastic artistic medium and its inherent qualities should condition form. As a medium its structural limitations are the length and breadth of planks when used in the solid, or size of the sheets when used in veneers. The scope of timber, however, is not bounded by these limitations but widened by the possibilities afforded from the use of its colour and grain. Considering these two aspects separately, the placing together of woods of different colours, so that an effect of harmony or contrast is produced, offers the greatest possibilities for decorative expression. This has been realized within recent years, and it is now sufficiently common to see wood used as a basic colour and pattern produced by the skilful blending of other woods. As an example of contrast: white oak banded Australian black bean, or with macassar ebony. As an example of harmony: walnut and Indian laurel. The possible combinations are as multitudinous as the possibilities of an artist's palette.

It must be continually borne in mind in the conception of a decorative scheme that the colour of timber is not a constant, since darkening comes with age. The application of wax, varnish and other coatings all tend to lower tone. This is most rapid during the first few years of use, the process then slowing down. It is therefore necessary to plan also for the intermediate period.

Trees are living organisms and, therefore, no two are exactly

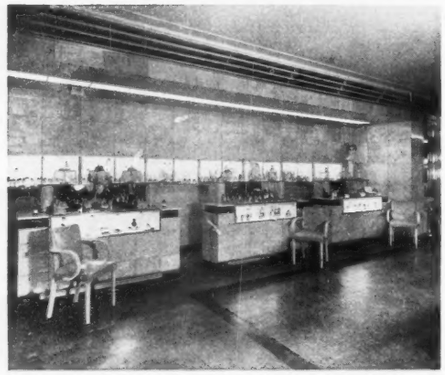
alike in either colour or grain. Veneers, cut from the same log can have a unity, but solid timber, cut from many logs, may differ greatly in both colour and grain. When, therefore, veneer and solid timber are jointly used great care is needed in the selection and placing of the solids so that both colour and grain rhythms are uniform with the motifs of the veneer. It is sometimes easier, however, to play for safety and to make the solid consciously disassociated from the plywood panels by a contrasting treatment as, for instance, can be obtained by contrasting rift sawn oak with quarter sawn, so that a distinct difference of grain rhythms is obtained. When, however, this care is not taken, such mistakes are often seen as two pieces of solid timber placed in juxta-position, each with a grain-run or colour value differing from the general theme of the solid work, thereby greatly marring what may be an otherwise excellent decorative conception. Parquet and block flooring is particularly liable to this criticism. Academically all the blocks in one line should have a similar grain-run. This being economically impracticable, as much care as possible should be taken to match the blocks and avoid the mistake of mixing, willynilly, rift and quarter sawn.

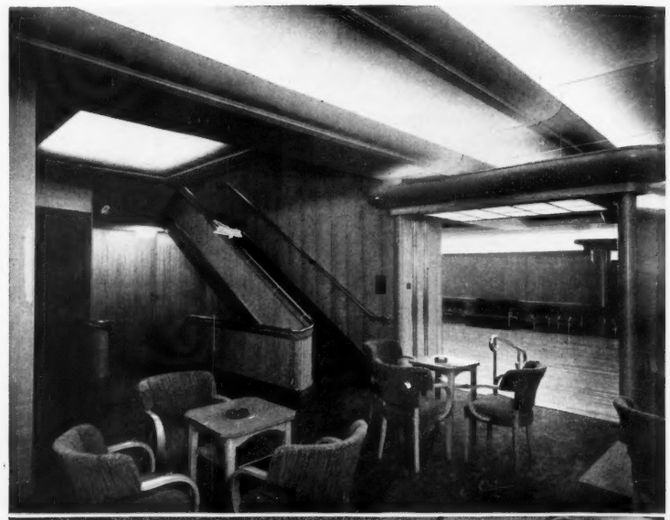


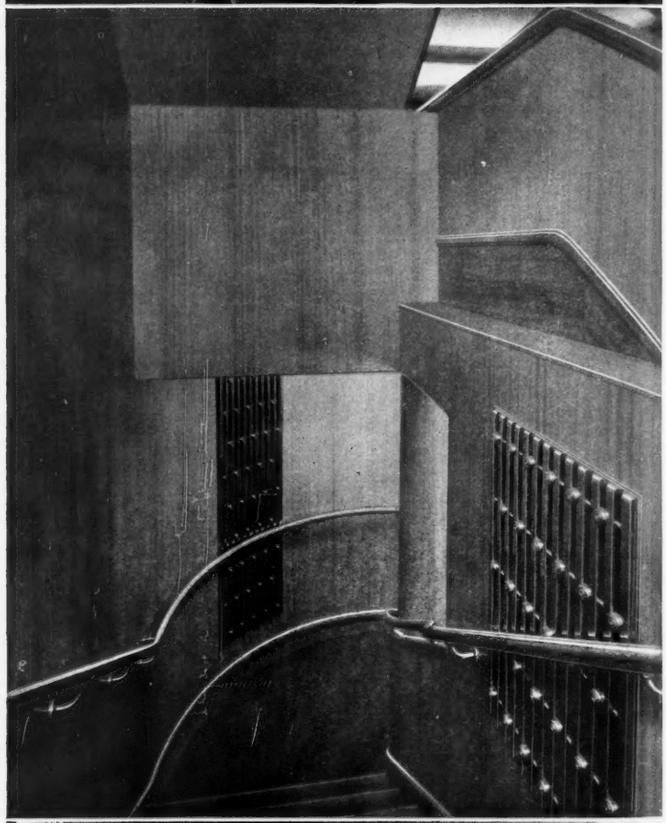


Above, two examples of contrasting colour-values, left, a banded design in Australian silky oak with teak trims and fitments, and, to the right of it, flush panelling in English brown oak framed in English walnut. Below are two illustrations of wall treatment from Dagenham Town Hall, E. Berry Webber, architect. Below, left, a pair of swing doors in walnut veneer, framed in a solid walnut moulded surround. Below, right, a magnificent run of veneer in walnut where the grain plays an unusually bold part in the decorative scheme: in the small illustration, above it, example of burr walnut veneer used in the same chamber of the Dagenham Town Hall.

Below are three examples of shop interiors where the decorative use of wood is allowed to dominate the interior design. Top, figured teak is used for the island display counters in a multiple store. Centre, teak veneer is used in a café selling-counter. Bottom, flush plywood panelling is used both for wall cover and to shop fitments.







Right, three details of decorative treatment carried out mainly in wood in the Crane's Hotel, Barnsley, by H. R. Bridger; in each case the wood used is white mahogany. Top, the first floor lounge where the vertical emphasis of the grain is particularly marked. Centre, a detail of the main stair, showing the plastic treatment possible with a homogeneously-grained veneer. Bottom, the cocktail bar, white mahogany being used for wall surfacing and for flush doors.

Seasoning

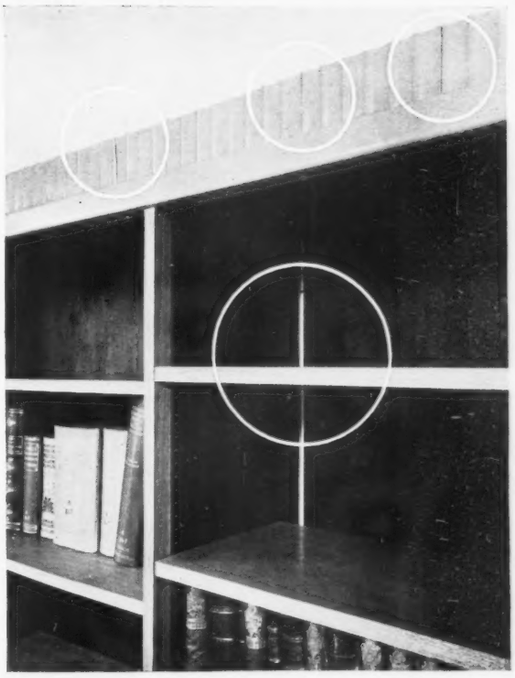
What do the words "properly seasoned timber" mean? They afford as much scope for argument as the phrase "a properly designed house." Properly seasoned for what? Obviously for the purpose in hand. Technically, the seasoning of timber means the drying out from the timber of the surplus moisture and the conversion of the inherent starch. If the timber be seasoned only in the air then it can never dry below the average moisture content of the atmosphere. In England this is about 20 per cent. If timber be kiln dried, moisture content can be reduced, theoretically, to 0 per cent. Between 20 per cent. and 0 per cent. what is the "proper" seasoning? Timber dries, like everything else, from the surface, interior moisture coming out by capillary attraction and then evaporating. Timber, therefore, can look perfectly dry on the surface and yet be sopping wet inside.

It must, then, be obvious that the proper seasoning for any piece of timber is conditioned by the hydration of the atmosphere in which it is to be used; in other words, timber which is to be put into a centrally heated house needs further drying than that which is to be used in an exposed position. Greater co-operation between architect and timber merchant would obviate much trouble due to complaints of "not properly seasoned timber." Where an architect can find a thoroughly reliable merchant, preferably with his own kilns for special drying, he would be wise to specify him, giving him details of the use to which the timber is being put.

The nature of timber is to be "alive" and to "move," though some timbers, notably Burma teak and English oak, without strong grain, move less than others. Therefore, where possible, timber should be given play and not be rigidly fastened, so that, with the changing of seasonal atmospheric humidity, the timber may adjust itself without splitting.

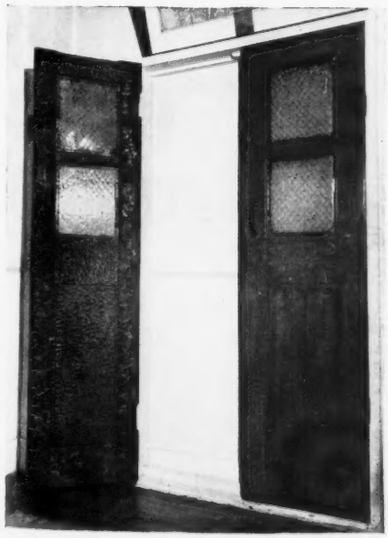
PRESERVATION of carcassing timbers from the dry rot fungus is not strictly necessary where seasoned timber be used and efficient ventilation of floor bearers, studding and the like is provided for. It is, however, to be recommended as a precaution, and the extra cost reckoned as insurance against renewal. It is an absolute necessity for counteracting beetle. There are many methods varying from pressure impregnation to brush (i.e. surface) application. Surface application, however, must be used with circumspection since, unless thoroughly done, its effect is apt to be impermanent. Preservation with coal-tar products needs special care where painting is to be done. Unless a metal priming coat be used the paint work is apt to discolour.

FIRE PREVENTATIVES are another form of insurance at low cost. They also act as preservatives and most of them are beetle-deterring. It is noteworthy that timber in itself can, paradoxically, be fire deterrent and hardwoods, such as English oak, burn less readily than soft woods. Burma teak is the most fire resistant of all woods. Charcoal being fire-resistant the more rapidly structural timber chars the more fire resistant it becomes. Examples may be seen in the London Fire Brigade Museum of heavy timbers thoroughly charred which remained in position when steel girders buckled under the heat, causing building collapse.



Right, the cracks shown in this piece of built-in equipment are not due to improper seasoning or faulty workmanship, but illustrate what happens when timber is seasoned to one moisture content, and subsequently used in a drier atmosphere.

Bottom, left, pair of teak fire doors after being subject to considerable heat in a major fire. As will be seen, though one side is heavily charred, the other still retains its varnish coat.



VARIETIES OF TIMBER

Although by no means a general rule, hardwood timbers may be roughly divided into two categories: decorative and utilitarian. The decorative are those which have qualities of colour and grain giving them an economic value surplus to their value as timber. This applies to most of the imported foreign hardwoods as well as to many of the homegrown, and occasions their use in veneer rather than in solid form. Woods such as sobrani, Indian laurel, walnut, certain mahoganies, sycamore, plain and figured, English oak and the like have all, from the great measure of their decorative possibilities, attained a value that often inhibits their use in the solid. The principle varieties economically usable in solid form are oak (Japanese, Austrian, English and Australian) teak, mahogany, jarrah and certain walnuts together with many African trees which have a superficial resemblance to either teak or mahogany. This differentiation into solid and veneer timbers is by no means, rigid. For instance, teak and oak are used in both media; it is often occasioned by the amount of "figure" of the individual tree and consultation with a reliable timber merchant or joinery manufacturer before the woods to be used are finally decided, will often make their choice both easier and more economical. In the pages that follow, it is proposed to deal exclusively with the English hardwoods, since it is precisely our own native woods that are least known and probably least used in this country today.

English Hardwood

It is not generally realized that there are over twenty timbers native to this country available for architectural use, many of them with distinctive decorative characteristics. Oak is well known, both flat sawn and quartered, but the possibilities of the grain markings of elm have not received the attention this wood deserves. Elm has an extremely strong lineal figure when both flat and quarter sawn. In the solid it should be used with care because all strongly figured woods tend to move in the direction of their grain. In veneer, however, its possibilities are most interesting. Ash, too, has strong grain and, although normally white, the heartwood is sometimes of a greeny-brown colour which is most attractive, giving it the name of olive ash. Sycamore is well known, but plane and beech, both of which carry flakes in their figure, have been very neglected. The pattern-making possibilities of veneers in these two woods, much on the same lines as quarter oak is matched up, are very interesting indeed.

There are numerous other woods all offering delightful possibilities. Acacia, although very limited in supply, has a green-gold colour which for banding work can be very pleasant. Cherry and pear are two more that would repay attention.

It is perhaps remarkable that English hardwoods have a definite "woody" feeling which is not so generally noticeable in many of the imported veneers.

THE PRODUCTION OF TIMBER

1, deisel tractors haul the trunks from the felling ground to the timber yard. 2, they are stacked under the gantry. 3, they are placed on the log-haul and conveyed to the saw mill. 4, the cross-cut saw is brought into operation to obtain the requisite lengths. 5, the band-saw converts into planks. (The band-saw actually shown is 47 feet long and the carriage, electrically operated, handles trunks over 50 feet long.) The mechanical peavies (grips) on the carriage, adjust the log for sawing to within a fraction of an inch. 6, the planks are stacked for seasoning. 7, woods likely to stain, such as poplar, are stacked vertically. 8, the making of a finished product from pieces of cross-cut timber – a dartboard taking shape under the craftsman's hand.

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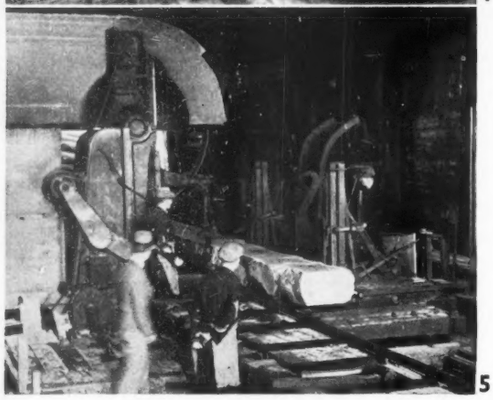
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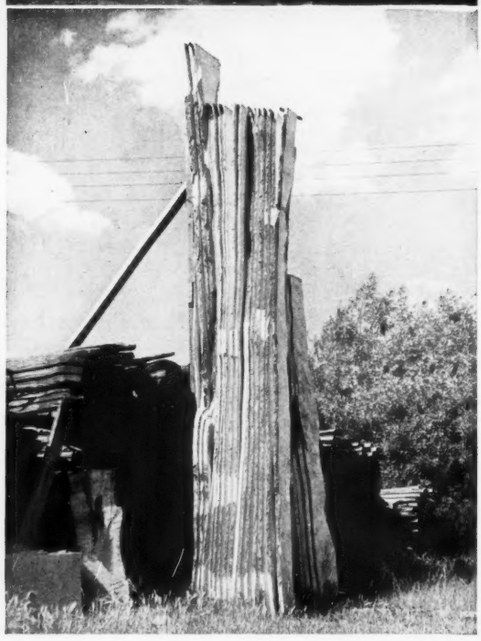
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8

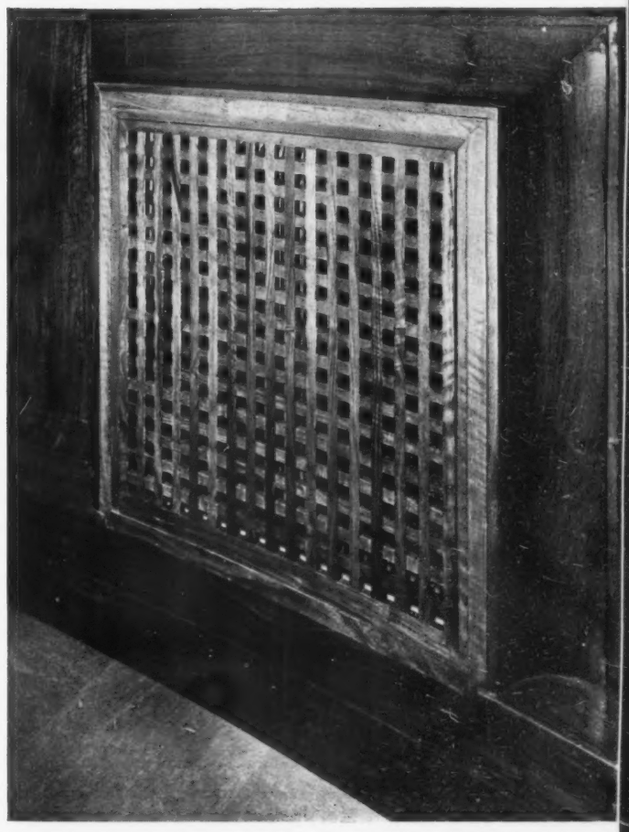
AN INDEX OF ENGLISH TIMBER USES

Though the following list of uses of English Timbers, which is reprinted from "Home Grown Timber," by John Sadd and Sons, covers a field which is largely non-architectural, it does provide, apart from its intrinsic interest, a valuable idea of the surprisingly rich and varied range of native Timbers available to architects.

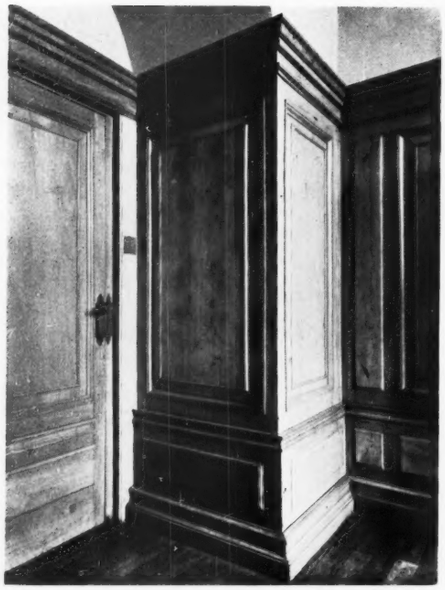
Aircraft	*Ash, elm.*
,, propellers	*Walnut.*
Artificial limbs	*Willow, alder.*
Axles, cart	*Elm.*
Barrows, wheel	*Oak, elm, ash.*
Baskets, chip	*Poplar.*
Beams	*Oak, Spanish chestnut.*
Bentwork	*Ash, beech.*
Bentwork roofsticks for covered vans, wagons, etc.	*Oak, ash.*
Billiard cues	*Ash.*
Blocks, bootmakers' press	*Elm.*
,, brake	*Elm, willow, poplar, hornbeam.*
,, butchers'	*Ash, beech, hornbeam.*
,, carpenters' plane	*Beech.*
,, hat	*Lime, poplar, alder.*
Blocks, paving	*Oak, elm, beech.*
,, pulley	*Elm, ash, hornbeam.*
,, railway packing	*Elm.*
Boarding, rough	*Poplar, elm.*
Boat and barge building	*Oak, elm.*
Bobbins, jute	*Beech.*
,, wool and cotton	*Beech, birch, sycamore, maple, horse chestnut, hornbeam.*
Boot heels	*Beech.*
,, lasts	*Beech, lime, hornbeam.*
,, trees	*Sycamore, maple.*
Bootmakers' press blocks	*Elm.*
Bowls	*Elm, sycamore, maple, beech, plane, ash, oak, walnut.*
Boxes, tin plate	*Elm, beech, birch, cedar.*
Brake blocks	*Elm, willow, poplar, hornbeam.*

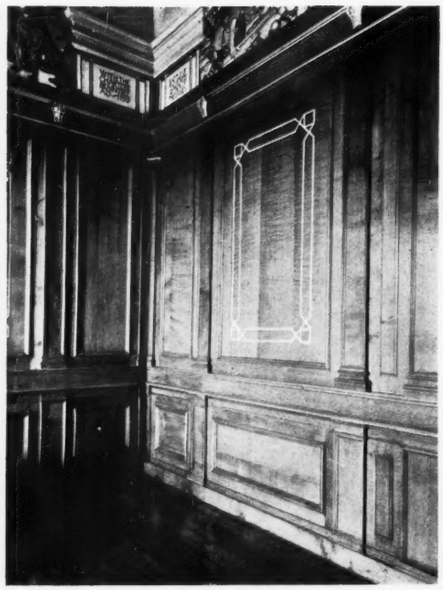
Bridges, wooden	*Oak.*
Brushes (backs)	*Beech, birch, sycamore, maple, lime, willow, poplar, alder, horse chestnut, cherry.*
,, (lime, whiting, etc.) heads for	*Elm.*
Butchers' blocks	*Ash, beech, hornbeam.*
,, skewers	*Lime.*
,, trays	*Beech.*
Cabinet work	*Ash, oak, walnut, Spanish chestnut, sycamore, maple, lime, horse chestnut, cedar.*
Carpenters' bench screws	*Beech, yew, apple.*
,, vice screws	*Hornbeam.*
,, plane blocks	*Beech.*
Carriage building	*Ash, birch.*
Cart axles	*Elm.*
,, felloes	*Elm, oak, ash.*
,, frames	*Oak.*
,, shafts	*Oak, ash, elm.*
,, sides and bottoms	*Elm, crack willow, poplar.*
,, wheel spokes	*Oak.*
Carving	*Oak, lime, pear, apple.*
Cases, packing	*Elm, poplar.*
Chairs	*Beech, birch, elm, yew.*
Charcoal	*Oak, willow, alder.*
Cheese shelves	*Poplar.*
Chocks, dock and shipbuilding	*Oak.*
,, for pit props	*Oak.*
Clogs	*Elm, birch, maple, willow, alder.*
Clubs, golf	*Holm or Evergreen oak.*
Coffins	*Oak, elm, Spanish chestnut.*
,, bottoms	*Poplar.*
Cogs, pinion wheel	*Beech, yew, pear, apple, hornbeam.*
Colliery pats	*Elm.*
,, slides	*Elm.*
,, spraggs (railway)	*Oak, ash.*
,, trams	*Elm.*
,, tubs	*Poplar.*
,, tub wedges	*Oak.*
Contractors' tip wagons	*Elm.*
Cooperage (wet)	*Oak, birch.*
,, (dry)	*Lime.*
,, staves	*Oak, Spanish chestnut.*
Dairy utensils	*Ash, sycamore, maple, horse chestnut.*
Dock fenders	*Elm.*
,, and quay piles	*Oak, elm, beech.*
,, ,, ,, walings	*Oak.*
,, ,, shipbuilding chocks	*Oak.*
,, ,, wharf staying	*Elm.*
Dolley heads (piling)	*Elm.*
Domestic utensils	*Beech, sycamore, maple.*
Dowels	*Oak, ash.*
Draining boards	*Beech, sycamore, maple.*
Felloes, cart wheel	*Elm, oak.*
Fencing	*Oak, Spanish chestnut.*
Fenders, dock	*Elm.*
Ferrules (railway)	*Oak.*
Fittings, shop window	*Oak.*
Flooring, parquet	*Oak, elm, beech, sycamore, maple, plane, yew, acacia, crack willow.*
Floors, drying kiln	*Poplar.*
Flower, malt, etc., shovels	*Beech.*
Frames, cart	*Oak.*
,, for cheap motor lorries, etc.	*Beech.*
,, railway wagons	*Oak.*
,, wheelbarrow	*Ash, elm.*
,, window	*Oak.*
Framing, loggia and verandah	*Oak.*
,, picture	*Oak, ash, apple.*
Fretwork	*Horse chestnut.*
Furniture	*Oak, holm oak, ash, elm, Spanish chestnut, walnut, birch, sycamore, maple, plane, yew, cedar, cherry, pear.*
Gate posts	*Oak, Spanish chestnut, acacia, yew.*
Gates	*Oak, Spanish chestnut, acacia.*
Golf clubs	*Holm oak.*
Groins, sea	*Oak, elm, chestnut.*
Gun stocks	*Beech, walnut.*
Half-timbering	*Oak, elm, yew, acacia.*
Handles, pick, shovel, etc.	*Ash.*
,, tool and various	*Elm, ash, beech, pear, apple.*
,, umbrella	*Ash, cherry.*
Hat blocks	*Lime, poplar, alder.*
Headtrees, pit	*Oak.*
Heels, boot	*Beech.*
Hoops, various	*Beech.*
Hop-poles (coppice wood)	*Spanish chestnut.*
Instruments, mathematical (set squares, etc.)	*Pear, apple.*
Instruments, musical wind	*Maple, lime.*
Keys, railway	*Oak.*
Knobs (turnery)	*Oak.*
Ladder staves	*Oak, ash.*
Lasts, boot	*Beech, lime, hornbeam.*
Laths (rent)	*Oak, Spanish chestnut.*
Limbs, artificial	*Willow, alder.*
Loggia and verandah framing	*Oak.*
Malls (heads)	*Elm, hornbeam, apple.*
Mallets	*Beech, yew, pear, hornbeam*
Malt, flour, etc., shovels	*Beech.*
Mangers	*Elm.*
Mangle rollers	*Beech, sycamore, maple.*
Mathematical instruments (set squares, etc.)	*Pear, apple.*
Matchwood	*Poplar.*
Motor car bodies	*Oak, ash, Spanish chestnut, birch, acacia.*
,, lorry bodies	*Oak, ash, Spanish chestnut, acacia.*
,, ,, ,, (cheap) frames for	*Beech.*
Musical instruments, wind	*Maple, lime.*
Packing blocks (railway)	*Elm.*
Packing cases	*Elm, poplar.*
Panelling	*Oak, ash, elm, walnut, sycamore, plane, crack willow, yew, pear, cherry.*
Parquet flooring	*Oak, elm, beech, sycamore, maple, plane, yew, acacia, crack willow.*
Pats, colliery	*Elm.*
Patterns, moulders'	*Horse chestnut.*
Paving blocks	*Oak, elm, beech.*
Pegs, shoe	*Cherry.*
Piano work	*Lime, beech, hornbeam.*
,, wrest-planks	*Beech, plane.*
Pick and shovel handles	*Ash.*
Picture framing	*Oak, ash, apple.*
Piles, dock and quay	*Oak, elm, beech.*
Piling, dolley heads	*Elm.*
Pinion wheel cogs	*Beech, yew, pear, apple, hornbeam.*
Pit headtrees	*Oak.*
Pit props, chocks for	*Oak.*
Pit props, large	*Oak.*
Posts, gates and fencing	*Oak, Spanish chestnut, acacia, yew.*
Powder cases	*Oak.*
Presses, trouser	*Sycamore, maple.*
Printers' machinery	*Sycamore, maple.*
Propellers, aircraft	*Walnut.*
Pulley blocks	*Elm, ash, hornbeam.*
Quarry, etc., trams	*Elm.*
Racquets, tennis, etc., bends for	*Ash.*
,, tennis, etc., throats	*Elm, walnut.*
Railway ferrules	*Oak.*
,, keys	*Oak.*
,, packings	*Oak, elm.*
,, treenails	*Oak.*
,, wagons, framing	*Oak.*
Rams (bleaching trade)	*Beech.*
Rollers, large machine	*Beech, sycamore, maple,*
,, mangle	*Beech, sycamore, maple.*
,, textile	*Plane, alder.*
,, trawl	*Elm.*
Roof timbers	*Oak, Spanish chestnut.*
Roofing shingles	*Oak.*
Screws, carpenters' bench	*Beech, yew, apple.*
,, ,, vice	*Hornbeam.*
Sea groins	*Oak, elm, Spanish chestnut.*
Shafts, cart	*Oak, ash, elm.*
Shingles, roofing	*Oak.*
Shoe pegs	*Cherry.*
Shop stands	*Oak.*
,, window fittings	*Oak.*
Shovels, malt, flour, etc.	*Beech.*
Shovel, pick, etc., handles	*Ash.*
Sieve rims	*Oak, ash, elm, beech, willow.*
Silos	*Elm.*
Sills	*Oak, Spanish chestnut.*
Skewers, butchers'	*Lime.*
Skittles	*Hornbeam.*
Slides, colliery	*Elm.*
Spades, children's	*Beech.*
Spindles	*Birch.*
Spokes, cart wheel	*Oak.*
Spraggs, colliery railway	*Oak, ash.*
Staircases	*Oak, elm.*
Stalls, horse and cattle	*Elm.*
Staves, coopering	*Oak, Spanish chestnut.*
Staves, ladder	*Oak.*
Staying, dock and wharves	*Elm.*
Stocks, gun	*Beech, walnut.*
Tank covering	*Elm.*
Tennis racquets, bends for	*Ash.*
,, ,, throats for	*Elm, walnut.*
Tin plate boxes	*Elm, birch, beech, cedar.*
Tool handles (various)	*Elm, ash, beech, pear, apple, hornbeam.*
Toys	*Oak, ash, elm, beech, birch, sycamore, maple, plane, lime, willow, poplar, alder.*
Trams, colliery, etc.	*Elm.*
Trawl rollers	*Elm.*
Trays, butchers'	*Beech.*
Treenails, railway	*Oak.*
Trees, boot	*Sycamore, maple.*
Trouser presses	*Sycamore, maple.*
Tubs, colliery	*Poplar.*
Turnery	*Oak, elm, beech, birch, lime, alder, horse chestnut, acacia, cherry.*
Utensils, dairy	*Ash, sycamore, maple, horse chestnut.*
,, domestic	*Beech, sycamore.*
Veneers	*Oak, ash, elm, beech, birch, sycamore, plane, walnut.*
Wagons, contractors' tip	*Elm.*
,, covered, bent roof-sticks for	*Oak, ash.*
Walings, dock and quay	*Oak.*
Walking sticks	*Ash, cherry.*
Weatherboarding	*Elm.*
Wedges, colliery	*Oak.*
,, various	*Beech.*
Wheelbarrows	*Oak, elm, ash.*
Wheels, water	*Crack willow.*
Window frames	*Oak.*
Wrest-planks, piano	*Beech, plane.*

Some Examples of English Hardwoods

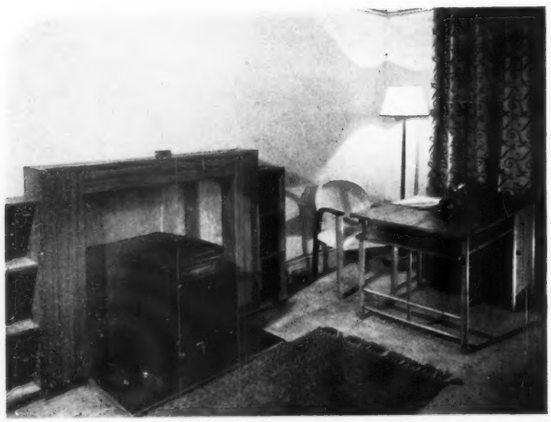


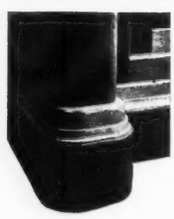
Above is shown an example of wood used in a position that speaks well for its qualities of seasoning and craftsmanship: casing to a small central heating unit set in a skirting, carried out in English walnut at Dagenham Town Hall, E. Berry Webber, architect.





Above, are all examples of English hardwoods from Braintree Town Hall, by Vincent Harris, which, with the exception of one room, is panelled throughout in native hardwoods, chestnut, elm, oak, pear and walnut all being used. Above, left, panelling in English pear. Above, centre, a slightly more decorative panelling scheme in English brown oak, inlaid with holly. It may be mentioned here that brown oak, a natural pigmentation of the white oak, is actually not discoverable until after the log has been converted in plank form. Above, right, a very fine example of English burr walnut quartering which fits admirably into the slightly flamboyant style of its setting.





Left, three further examples of English hardwoods in use. Top, elm used for simply designed office furniture and fitments, made from quarter-cut planks. Laurence Rowley, designer. Centre, another example of elm used in the new Austin Reed shop at Bournemouth, by Brian Westwood. The unassuming quality of the wood is happily expressed in the design and forms an admirable foil for the more important task of displaying the goods for sale. Bottom, an interesting use of three English woods in combination. The greenish-gold of acacia employed as a moulding to walnut panelling, with a skirting in brown oak.

Comparative Prices of English Timber

	IN THE SIZES	USUALLY	AVAILABLE
	Thickness in inches	Width in inches	Length in feet	Comparative Prices
ACACIA	2—4	6—12	6—14	Equal
ALDER	2—5	6—12	8—16	$33\frac{1}{3}\%$ less
ASH	1—6	6—24	8—24	Equal
BEECH	1—6	10—24	6—14	$33\frac{1}{3}\%$ less
CEDAR	$\frac{1}{4}$—6	8—42	6—16	25% less
CHERRY	1—10	8—16	6—12	25% less
CHESTNUT, SWEET	1—4	10—24	8—16	20% less
CHESTNUT, HORSE	4—6	10—20	8—15	40% less
ELM	$\frac{3}{4}$—6	12—30	10—20	$33\frac{1}{3}\%$ less
HORNBEAM	2—6	8—16	6—12	15% less
LIME	2—6	10—24	8—16	40% less
MAPLE	1—4	10—18	6—10	Equal
OAK, WHITE, T. & T.	$\frac{3}{8}$—8	10—24	8—24	BASIS
OAK, WHITE, Q.S.	$\frac{3}{8}$—12	6—12	6—12	100% higher
OAK, BROWN	1—6	6—20	6—12	50% higher
PEAR	1—4	6—12	6—8	Equal
PLANE	1—4	10—24	6—16	20% less
POPLAR	1—4	12—40	6—24	40% less
SYCAMORE	1—6	10—20	6—16	50% higher
WALNUT	2—4	10—30	6—10	100% higher
YEW	1—6	6—12	5—10	Equal

Reprinted from "Home Grown Timber:" John Sadd & Sons

Cosmopolitan

Susie was busy among the coffee-cups. They were real Sèvres and had been one of the Matriarch's most cherished wedding-presents. But Susie disliked all the Rakonitz possessions, and could never see that they had achieved, in this room, an accidental beauty, smouldering, burnished, fantastic, dwindling into tinier and tinier rooms, brilliant in miniature, locked one within the other, down the pavilions of the many mirrors; mirrors—but no pictures, except the one of Simone. The Uncles did not buy pictures. But they had bought, a magnificent bargain, the two Venetian candelabra which swung from the painted ceiling. Silky Persian rugs blended their faint blues and pinks and fawns on the parquet flooring. The shining Bechstein grand had nothing on it except, thrown over one corner, a heavy Chinese cover Paul had brought from the Paris Exhibition of 1900—deep plum colour interwoven with formal arabesques of rusty gold. The furniture was in the French Second Empire style, with the Egyptian influence—straight gilt legs and backs, that spread into carvings of queer beast faces and god faces. The tall Buhl cabinets showed Sèvres again behind their glass; and the bureau enshrined a pair of priceless Vernet Martins in its panels. The damask embroideries on the couch and the chairs were not as vivid as they had been when Maximilian first gave them to his sister. He and Louis had quarrelled over the Cloisonné jar which stood in one corner; Louis had condemned it, but it had remained there all the same. If Maximilian had been the one to say " Horrible ! " the Matriarch would have banished it from favour at once.

It was a room in which the East and the West and Cosmopolis had poured their very best craftsmanship, and the result was superb, though worshippers of austerity would have stalked away in horror. Vienna and Constantinople were in this room, Egypt and China; it savoured, too, of Empress Eugénie's Paris. Bokhara lay on the floor; and the English brothers Adam, with their huge wigs and twinkling shoe-buckles, had proportioned it, and so done their share. The riot of colour repeated itself a thousandfold in the flashing crystals that swung from the candelabra, and danced and pirouetted from mirror to parquet, and back again, spots of minute fire in the old paste and rubies of the Matriarch's great marquise ring. Maximilian, who was the first to enter from the dining-room, stood for an instant in the doorway, lord of all this opulence. . . . The period of Rakonitz glory had, like every climax, something vaguely ominous in it. You might hear it, sounding through the rich notes of Zillah Korischelski's voice . . . for, tired of waiting, she was already at the piano :

" Du hast Diamanten und Perlen,
Hast alles was Menschenbegehr . . ."

G. B. STERN (" Tents of Israel " : Chapman & Hall, 1924)

MARGINALIA

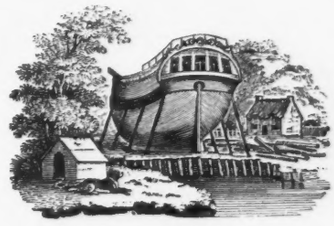
The Royal Academy

The annual exhibition at Burlington House continues to present the same old problem to the conscientious critic : is so easy, and indeed saves so much trouble, to regard the whole thing as just a recurring occasion for amusement (and make no mistake it is and one hopes will continue to have, its uproariously comic aspect), but the doubt will intrude that somewhere, lurking amidst the aldermen and the landscapes seen from Newlyn are certain pictures which not only possess merits of their own but do in a curious clumsy way provide a precarious link with the world of contemporary art. Nowadays the task of finding some convenient bridge between Piccadilly and the Rue de la Boeotie, or for that matter Trafalgar Square or Millbank, is rendered doubly hard by the absence of Messrs. Sickert and John, and one is forced therefore to scrutinize far more carefully these crowded walls, instead of glancing rapidly through the list of exhibitors and marching straight off to the works of the select few. Which is admittedly a very good thing.

Before doing a conducted tour of the rooms, a few words as to the general aspect. The first thing that strikes one, after the phenomenal number of clerics on the walls, and an unusual absence of mayors, is the marked lightening and brightening of colour; not that, save in so far as it lends an air of the rather specious cheerfulness to the whole, this is to be regarded as any particular improvement. The second is the sad decay of what one had always regarded as one of the principal canons of Royal Academic art, *i.e.*, that although the object after which the painter strains need have no connection with art, it must be difficult to accomplish, or at least give the spectator the feeling that it has not been easy going. Now, alas, this sound doctrine seems to be sadly neglected, save by a few stalwarts such as Mr. Brockhurst, and there are far too many pictures, some, which it would be invidious to distinguish, some by hitherto honoured names, which not only have quite obviously no æsthetic justification but equally obviously were no trouble at all to paint. This is all wrong, for if virtuosity leaves Burlington House, we shall all be forced to save our shillings and go and look at the colourful paintings of carousing Cardinals in the Burlington Arcade.

In the first two rooms there is little to detain the visitor, unless he is by any chance an admirer of the St. Ives school (circa 1900), in which case he will doubtless pause before the works of Messrs. Olson, Talmage, and Lamorna Birch, but Room III, the grand saloon, provides several opportunities for study and speculation. The first place must assuredly go to Mr. Connard's portrait: Miss Greig (No. 164). Of all the old guard at the Academy, Mr. Connard seems to be the only one who has not only not been content to remain static, but whose efforts to impart a contemporary quality to his work are both sincere and reasonably successful. The present work is one of the most charming and certainly the wittiest portrait in the Exhibition. On the same wall is a very curious, in these surroundings, picture of a fat girl at a circus by Mr. Fitton, which recalls in a more subdued way, some of the earlier work of Georg Grosz.

The third surprise is a charmingly painted picture of a little negress by Hon. Desmond Harmsworth (No. 202). Doubtless it is not a painting of very heavy calibre and if one saw it in a dealer's window in Bond Street one would not pause long, but here it strikes an exceedingly refreshing note. The rest of the room is given over to the usual collection of politicians, royalty and young women stripped to the waist still waving sickles and balancing jugs, by Mr. Russel Flint. There are also two portraits by Sir John Lavery, painted at twenty year intervals, which provoke the gloomiest reflections.



In Room V there is a head of girl, No. 316, painted with a welcome thoroughness and restraint which might easily be overlooked among its flashier neighbours.

Room VI has a strongly Papist flavour, with life-size full-lengths of a Dominican and Mr. Hilaire Belloc and an over-life size Simon Elwes of the late Abbot of Buckfast.

Room VII contains the two worst pictures in the whole exhibition. The law of libel prevents one giving any more detailed directions to the visitor, who should not, however, have much difficulty in locating them.

In room VIII there is a pleasant, unsensational view of a watering place by Adrian Hill, a praiseworthy if not an altogether successful attempt to solve a problem not unworthy of an adult painter, " The Reapers " by Alfred Hallet (No. 487), and an accomplished piece of impressionism " Port of Bristol " by Lord Methuen.

More surprising, however, than all that, is the presence of a small canvas of a sailing ship by John de Botton (531) painted with all the gaiety and sparkle which are the hall-mark of that school of modern French illustrators of whom Eddy Legrand is perhaps the most illustrious and the late Jean de Brunhof the most popular.

In the remaining two rooms of oil-paintings the only pictures which remain in the mind are a sound unsensational head of a girl by Henry Carr (No. 562) and another work, this time a landscape, by Desmond Harmsworth in Room XI, which like his other exhibit might not seem anything very remarkable elsewhere, but which in its present setting has an air of considerable originality and charm. Incidentally it has the good fortune to be alongside a Nevinson landscape, rather similar in tone, which is an unworthy example of that painter's art.

In the water-colour rooms there reigns, curiously enough, an air of considerable gloom ; the move in favour of brighter tones seems not to have effected the modern practitioners of this properly gay art. In the small room a gouache rendering of a suburban courtship of quite unbelievable facetiousness strikes a " bright " note—in

ADMIRABLE EXAMPLE OF KENSINGTON SQUARE

Kensington Square was begun in the reign of James II and completed by the time that Anne came to the throne, and although some disastrous rebuilding took place on the north side during the last century and some of the houses were reconditioned in Regency times, the square as a whole, particularly the west side, retains much of its original appearance. The square has had a long list of distinguished residents ranging from the Duchesse de Mazarin to John Stuart Mill, from Talleyrand to Sir Edward Burne-Jones, and some years ago the successors of these notabilities bound themselves as freeholders in a self-denying ordinance whereby they promised never to sell their houses to any but bonâ-fide private residents. This was an admirable and disinterested manœuvre but unfortunately it had loop-holes. It is therefore good news to hear that they are now negotiating through the National Trust with the L.C.C., to have the whole square scheduled under the powers granted to that body under the Act of 1932.

both senses, neither of them favourable, of the word.

Before passing on to the serious business of the architectural room mention must be made of three pictures passed over in the general survey. One, a quite exceptionally dreary and unpleasant rendering of the Nativity, in what appears to be a cottage hospital, and which from its prominent position on the line in the big room is presumably intended to be the sensation of the year; the second a remarkable still-life by Mr. Meredith Frampton which confirms one in the opinion that the Academy is really the spiritual home of Mr. Salvador Dali; and the third an indubitable masterpiece of the fine old

Academy human-interest school entitled "Why War?" which combining as it does the meticulous craftsmanship and attention to detail of Frith with the rich sentiment of Luke Fildes is as fine an example of a way of painting, which with all its drawbacks was ten times better than the water style impressionism which has finally superseded it at Burlington House, as one is likely to find anywhere.

Architecture at the R.A.

Each year in that quiet back room where members of the public never penetrate, save for an occasional quiet rest from the exhausting business of tracking down all the works of their favourite R.A. or counting up the number and quality of all the pictures in which Highland terriers appear, there are collected the various contributions made by the architectural world to our annual feast of culture. It would be idle to pretend that this time-honoured arrangement is satisfactory either to the architectural profession or to the public. As a display of architectural activity and accomplishment it is overcrowded, unrepresentative and grossly inadequate; to the public it is dull, largely unintelligible and shockingly misleading, for while it does indeed provide a formidable demonstration of the architectural draughtsman's strange and romantic art the average member of the public cannot be expected to realize how tenuous a connection exists between these neat, clean water-colours of dramatic or romantic buildings surrounded by the inevitable cypresses and set in wide unencumbered landscapes beneath perpetually cloudless skies and the actual constructions of which they are intended to be a pictorial realization.

It will doubtless be argued that if architecture is to be represented annually at Burlington House the present system is the only one that is workable; that while architects are fully aware of allowances to be made when judging a building from an elaborate water-colour, the public cannot be expected to possess sufficient knowledge or imagination to derive any pleasure or profit from the contemplation of plans or elevations. While admitting that there is a certain substratum of truth in these arguments one is surely justified in maintaining that a considerable improvement is not only desirable but perfectly possible.

First, there should be every encouragement offered to architects to send models. Not only are models not quite such travest of the actual buildings as the average architectural water-colour, but they possess a fascination of their own which few members of the public however uninterested in architecture can be found to resist. It is true that their appeal is based on a variety of reasons that have no architectural justification whatever, but nevertheless the public will stop and stare, and in one case in a hundred the right response may be produced. It will probably be objected that models take up room and that it would be quite impossible to accommodate more than the three or four on view at present. But why should they be confined to this one room? Surely if they were scattered about all the galleries they would arouse far more interest than they do at present without becoming unduly clamorous rivals to the pictures on the walls around them? The Architecture room itself could then be left free for the exhibition of elevations and plans; if necessary designs for stained glass windows. (Though why architecture should always be made to bear the burden of harbouring the annual quota of examples of this most irretrievably moribund of all the arts it is hard to know.)

Second, need an exhibition of plans and technicalities necessarily be always dull and uninteresting to the general public? One recalls displays at the Paris exhibition, of the M.A.R.S. Group, etc., which demonstrated that intelligent lay-out could do much to make the apparently hopelessly technical of absorbing general interest. But to expect either the Academy or those distinguished members of the architectural profession who habitually exhibit there to think along these lines is perhaps asking too much.

Of the hundred and forty-four exhibits this year, over twenty are designs for stained glass windows. Of the remaining 122 nearly half are designs for various State institutions with Police Stations well in the lead with the Ministries of Education, Labour, Health and War as runners-up in that order. The remaining exhibits are fairly evenly divided between Universities, Hospitals and Churches with a mixed residue of Memorials, Almshouses and an occasional Private House. Something, one feels, should be proved by this impressive display of statistics but one is at loss to know quite what.

What is evident, however, is the fact that schools and children's homes seem for some reason or other to inspire much the best designs of any form of modern buildings. The best thing here are two models by Messrs. Jordan and Handisyde for schools which are perfectly modern both in planning and idiom without being in the least eccentric or forced and which make admirable use of weather-boarding and glass. Police Stations, likewise, seem to be stimulating to the architect, or else the Office of Works decide always to try out modern architects on police stations before allowing them to progress to more ambitious works. There are two admirable examples by Julian Leathart. Nos. 1126 and 1122.

The new President is only represented by his design for the George V Memorial at Delhi of the final effect of which hardly any idea can be obtained from the elevation exhibited. No such uncertainty prevails, however, as to the exact appearance of the other Memorial to his late Majesty at Westminster, for Sir Giles Gilbert Scott has provided a neat little model accurately displaying the beauties of that jagged Gothic canopy, so unfortunately reminiscent in its present scale of a dental cast for some long-toothed carnivore, with which the statue is so curiously provided.

Sales-talk in the hedgerows

Next to bungalow barons the most hardened and persistent wreckers of the countryside are undoubtedly certain of the great advertisers. Whether or not the shining face of a strapping young woman eight times life size beaming in idiotic rapture and four colours over down and meadow is really an inducement even to the most insensitive to buy invalid port or face powder or whatever it may be, is neither here nor there; even if such atrocities are a powerful stimulant to sales, surely the most fervent defender of the sacred rights of private enterprise cannot justify the spoilation of in some cases acres of beautiful landscape in this manner. Nor is the countryside, although the principal the only sufferer; many admirable, or anyhow perfectly inoffensive buildings are wrecked by some great sprawling

MARGINALIA

THE BULL AND BUSH

"Come, come, come, and have a drink with me, Down at the Old Bull and Bush!" But not, alas, in quite the same care-free spirit; for the Bull and Bush has become "Ye Olde Bull and Bush." Gone is the blatant lettering, with its vulgar suggestion that alcoholic refreshment was obtainable; no longer stands the proud announcement of a "2 – ordinary every Sunday from 2 to 3." Gone too, one suspects is the ordinary itself, together with the twice-weekly concerts, their place taken by Radio Luxemburg, and a buffet counter. A masterpiece of restrained Georgian revival has arisen on the site. So restrained, in fact, that one has difficulty in realizing that behind that neat red brick façade there exists not a rectory but a pub.

appeal to buy somebody's patent something, in particular railway hedges. But alas, commerce although the worst is not the only offender; at least of our great hospitals and moreover with considerable architectural merits has persistently blotted decent classic façades with appeals which expressed wholly admirable sentiments in the worst possible typography.

However, in the case of towns any efforts at some sort of control are found to be prolonged, difficult and most certainly unsuccessful, but in country the case is different. Many enlightened firms, notably Shell, have of their own accord foresworn this form of advertising and there is no reason why their example should not be more generally followed. To what an extent this process of spoliation has attained in some of the most beautiful country in England is amply demonstrated in a pamphlet dealing with the lake District and roads leading to it published by the C.P.R.E. In the ghoulish pages of excellent photographs one may study at leisure how enthusiastically the rôle of Blakes' dark Satanic mills "as wreckers of England's green and pleasant land" has been adopted by Messrs. Blank, Blank and Blank, etc., whose wares, as they so proudly boast, are a household word.

R.B.A.

It was an excellent idea on the part of the Committee of the Royal British Artists to break fresh ground and to institute, as it were, a subject for an annual essay; this time London and Londoners. A large number of the contributors to the present exhibition have taken a wide view of the subject and the pictures range from a view of Mr. Lansbury to a portrait of Camden Town. However, a great many painters have conscientiously sat down to look at London, in several cases one suspects almost for the first time, which is all to the good.

The small room filled with a few extremely well chosen views of bygone London loaned from the Royal and private collections must inevitably have a rather overpowering effect on the rest of the exhibits, for not only are the aspects of the capital, largely 18th century, which they reveal a great deal more attractive than those which the modern artist feels compelled to treat, but a large proportion of them are by no less a figure than Canaletto. Although these charming scenes, particularly the two drawings from Windsor, are tolerably familiar to students of topographical art, any opportunity to renew one's acquaintance with them is always welcome. In passing, one might record one's astonishment at finding once more, as one always does in any view of the river at Westminster painted in the 18th or early 17th century, that the principal landmark on the north bank is the church in Smith Square, today a masterpiece that eager students of the period have considerable difficulty in finding, so unobtrusive have Messrs. Barry, Pugin and the I.C.I. rendered it. Another scene of considerable interest is the Canaletto view of the Horse Guards Parade showing Kent's familiar landmark in an unfamiliar material—brick.

The Price of Originality

"We've heard a rather sad story about a stockbroker who recently decided to redecorate his apartment along daringly modernistic lines. For the ceiling of his study he ordered a relief map of the two hemispheres, then went happily off to Bermuda, confident that he would come back to an apartment unique in New York. When he returned, however, he found that the relief-map ceiling, though undoubtedly unique, wasn't entirely practical. He is not a tall man, but every time he entered the study in the dark he bumped into the Himalaya Mountains, which hung down in the middle of the room like stalactites. He had to have them chipped off."

From THE NEW YORKER.

Victoria and Albert.

"Such was the origin of the South Kensington Museum. In 1899, Sir Aston Webb began the present building, such as it is; it was opened in 1909 as the Victoria and Albert Museum. Around it lie its satelites: the new Science Museum and Geological Museum; Waterhouse's Natural History Museum; and India Museum and an Imperial Institute. Prince Albert, if his spirit ever walks in Exhibition Road, may feel that he has wrought better than he knew. Here, on these barren acres, nobody

dies. Here, on the one side, are all the trumpery flotsam of learning, stuffed mammals and fossils, stuck into glass cases and labelled in the hope of filling some vacant mind. And here, on the other side, are some of the loveliest things on earth, whole rooms of English furniture, and the Raphael cartoons, and Pellè's bust of Charles the Second—here they are, snatched from the hands of private men, sterilized, caged together in tasteless surfeit, imprisoned without hope of release. Here, too, perhaps saddest of all, is a great staff of experts—unhappy custodians, bound by hated necessity to the prisoners of their great seraglio, yet pleased with a gloating pleasure that other men cannot get near them to enjoy them. From beyond their glass cages a few German and Japanese students of all ages come and blink through their spectacles at them and go away again, having added one more piece of information to the silly pile. Domestic servants make assignations among the period panelled rooms. And on Bank Holiday, when it is wet outside, quite a lot of people go."

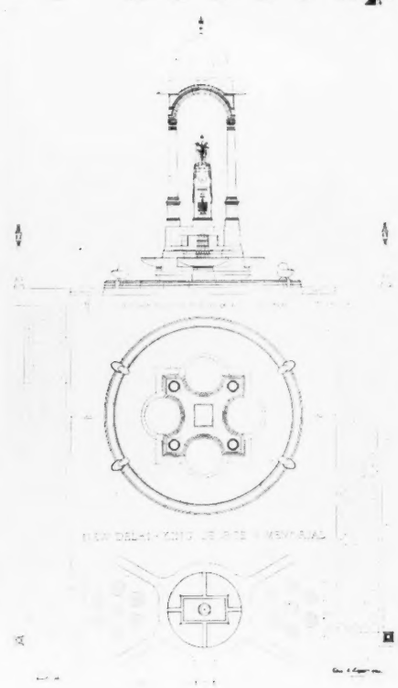
From "1851 and the Crystal Palace" by Christopher Hobhouse: John Murray.

Bewick

The vignettes in the current issue are examples of the work of the greatest of all wood engravers, Thomas Bewick. This remarkable artist was born in 1753 and died in 1828 and for over sixty years produced a continuous stream of wood-cuts, the majority illustrating his numerous works on natural history. Before him the art of engraving on wood was a cheap, slipshod and properly despised form of illustration but by his practise he raised it to a plane, equal in the public esteem to that occupied by etching and steel engraving, but on which, alas, his successors were seldom able to maintain it. His great gift as a craftsman was his ability to use his medium to the full without ever forcing it in order to accomplish feats of virtuosity, that properly lay beyond its scope. Other great masters, such as the Dalziels, were not occasionally guilty of employing their phenomenal skill to obtain effects, which, however striking, belonged properly to other media of reproduction. But Bewick, largely by keeping his blocks small, avoided their grandiose pitfalls. As an artist, his great virtues, rightly and insistently extolled by Ruskin, were his fidelity to nature and his extraordinary powers of observation coupled with an extreme economy of statement. As a recorder of animals and birds he has never been surpassed, largely because the charm is never suffered to deteriorate into sentimentality, as it did all too soon with Landseer and other celebrated masters of this genre.

His chief works are to be found in the illustrations to his "British Birds," "History of Quadrupeds" and "Aesop's Fables," and in innumerable children's books. In addition he produced quantities of small vignettes as tailpieces, bookplates, newspaper

CATHOLICITY AT THE ROYAL ACADEMY



Above and right are illustrated three exhibits from the Architectural Room at the Royal Academy Summer Exhibition. On the whole not unrepresentative of the general impression left by the architectural exhibits as a mass, they display that catholicity of taste for which the Academy is rightly renowned. Above, left, Sir Giles Gilbert Scott's design for the memorial to the late King George V, and above, right, Sir Edwin L. Lutyen's design for a similar memorial to be erected in Delhi—similar only in purpose, however, for Sir Edwin and Sir Giles are represented each in characteristic mood, as may be seen from the illustrations. Right, a model for a Children's Home, Buckinghamshire, by R. F. Jordan and C. C. Handisyde, a design of considerable charm and simplicity, presented in a medium that is always attractive to the non-architectural public.

headings, trade cards and bank notes. The present examples are taken from "Bewick Gleanings" a volume containing impressions of all the blocks left in his studio at his death, and represent his all too rare excursions into the realm of architectural illustration.

Correspondence

The Editor,

THE ARCHITECTURAL REVIEW,

Sir,—Your section on Tiles in the May issue was admirable. We appreciate, in this order, the idea and the very clear forewords; the historical notes by Mr. Arthur Lane, with the reservation noted below; and the challenging statements made by Mr. W. Tatton Brown.

Mr. Lane wrote "—the manufacturers, with a few honourable exceptions, are showing a woeful lack of imagination." It is certainly true that architects should design their tile settings for all purposes: but some refuse to be bound by standard stocks, often while wanting standard prices. Manufacturers need not only imagination but reasonable discretion.

Mr. W. Tatton Brown knows what he does not like; but, as Lewis Day once observed to William Morris about much the same attitude, that does not necessarily mean that what he does not like is not good. Tile factories are now organized on the basis of continuous tunnel kiln production. This production has to be sold steadily, and in general does not readily lend itself to the use of processes and the making of special shapes that are certainly possible (few materials are so flexible as ceramics) but are asked for in small quantities and at uncertain intervals. The greatest possibilities lie in the imaginative use of standard components.

Mr. Tatton Brown is in our opinion quite wrong in suggesting that die-pressed line patterns have more of a "tile" quality than painted (and we would include hand-lined) decorations. There are many decorative processes, most of them legitimate as expressing the material and good if properly used. We cannot understand the train of thought that sees something wrong in a bolection moulding made in ceramics—as if wood, marble and stone had a patent on certain shapes that can be well expressed in ceramics.

Mr. Tatton Brown's remarks on fireplaces may be restated thus: architects neglect the use of tiles in fireplaces — and manufacturers are unable to make the general public have the kind of fireplaces that architects ought to design, but do not. Failing this, makers basely sell to the public fireplaces that the public buy and like, instead of going out of business.

It is quite true that makers ar guilty; but they are no more guilt than the originators of the averag piece of "commercial" architecture which need not be described, since it i all about us. Their object is the sam as that of the architect, to live and pa their way. Certainly fireplaces shoul be better, and so should most othe things. No one could more keenl realize the unsatisfactory position fireplace design than fireplace maker and in so far as your Tile section hel to alter this state of affairs all make will welcome it.

Yours, etc.,

J. J. PRICE.

(for H. & G. Thynne, Ltd

An air view of the existing congestion (Photo: Aerofilms Ltd.)

Here is a brief specification of the various types of glasses which could be used in such a scheme :—

Polished Plate and "Armourplate" Windows, double windows, internal screens, etc. *Insulight Glass Bricks:* Staircase windows, partition walls. *Toughened Glass Lenses:* Roof lights, lights to underground roadways and passages. Canopy lighting. In reinforced concrete frames for screens, fixed windows, partitions. *"Armourplate"* for under-water lighting of swimming pool. *"Vitrolite" and Toughened Glass:* Wall facing, inside and outside. *"Vitrolite" and Cathedral Tiles:* Flooring. *Figured Rolled Cathedral Glasses:* Arctic, Morocco, Kaleidoscope.

BRITISH GLASS P.B.

• *Details of other Glass Age materials appear on the pages following the sixth report of the Committee.*

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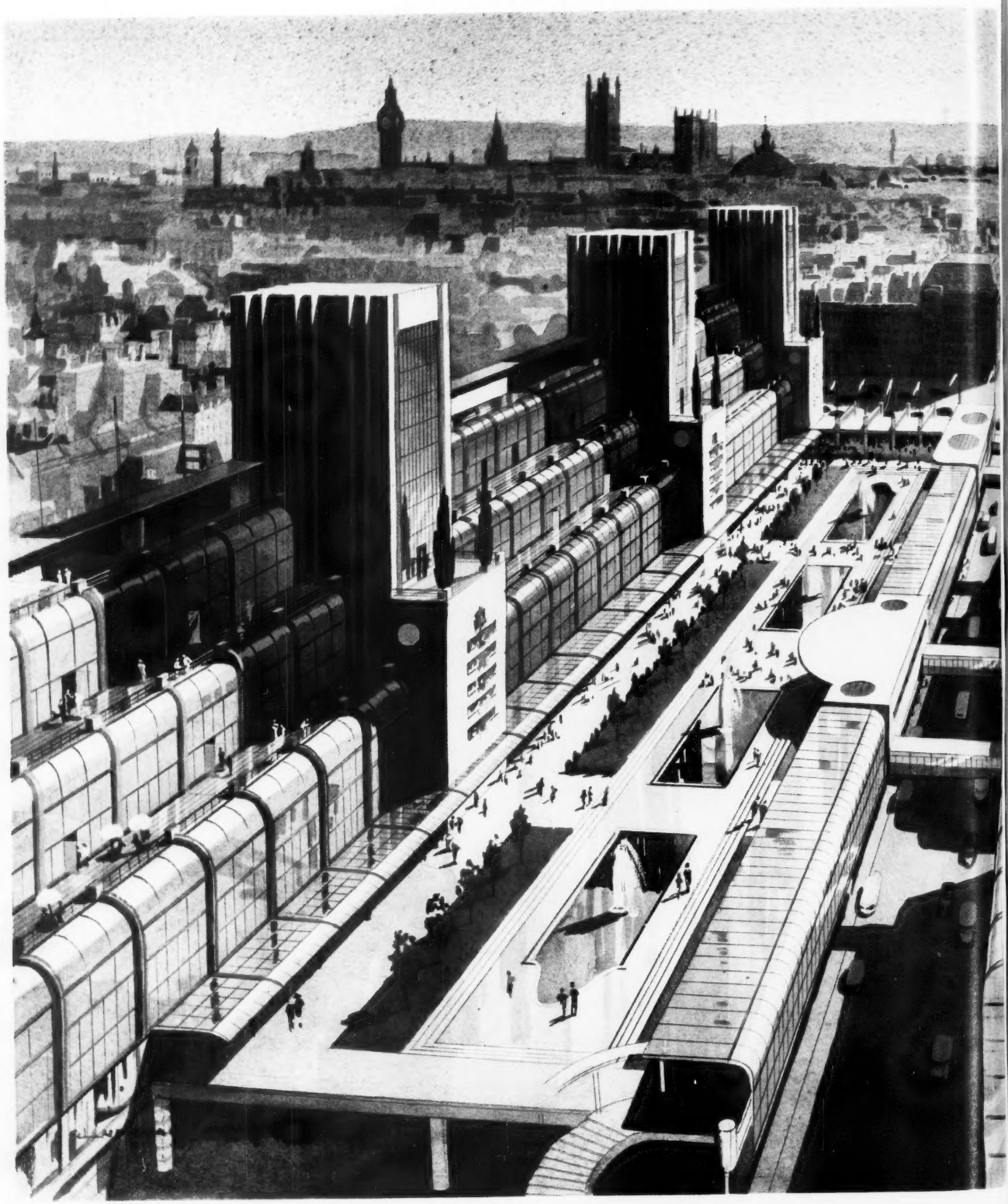
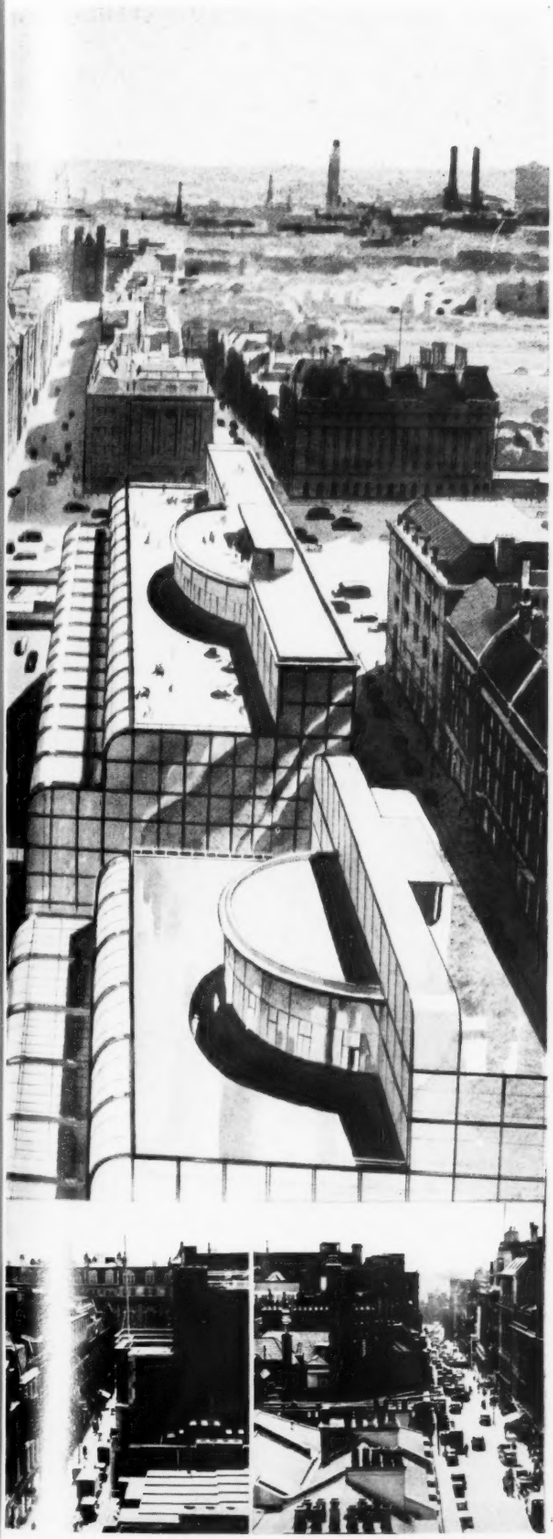




SECOND REPORT
OF GLASS AGE TOWN PLANNING COMMITTEE

● The second problem before the Committee was Bond Street. After discussion they appointed

Mr. Howard Robertson, F.R.I.B.A.,

to work out a plan. (The composition of the Committee is given on the page before the first report.)

DETAILS OF SCHEME: In this scheme BOND STREET recovers its status as the world's finest luxury shopping centre. The entire west side is pulled down, and the east side reconstructed in tall terraced buildings with tower units at intervals. The street is on two levels. Above, the shopping terrace way, for pedestrians only and giving access to shops, cafes, florists' shops and stalls. Below this broad grass and flower planted terrace is the motor park, with access to the upper level by staircases and escalators.

St. James's Street is continued north of Piccadilly, and is a one-way motor avenue. It is bridged to connect the western streets at right angles to Bond Street with the upper level terrace.

All roof spaces are used for recreation and outdoor exercise space. All plant is electrically operated, and smoke is banished.

The new Bond Street would be the first of a series of upper level glass-fronted street units, to include ultimately St. James's Street, Regent Street and Oxford Street.

Landing grounds for helicopters are not provided, but could be arranged at stations round the periphery of the central area.

SPECIFICATION: The buildings are designed with a reinforced concrete framework The system of construction assumes a regular series of divisions, divided into panels with metal framing. Each panel is susceptible of forming a complete window or of being subdivided into frames of " VITROLITE " or Polished Plate Glass. The planning consists of free space plus essential services to be subdivided as required. This glass wall or infilling is formed of two layers of glass, with an 8" cavity between. The cavity is heated from a central plant, and the buildings are entirely air-conditioned. Where windows occur, blinds are designed to operate within the cavity.

The outer walling of the Bond Street premises is of ivory " VITROLITE." The lower storeys of the tower units are faced with coloured " VITROLITE " in which are formed a series of designs representing the various trades found in Bond Street—Dressmakers, Modistes, Florists, Jewellers, etc. The side walls of the towers are faced with matt pale green " VITROLITE."

Alternating with clear window glass extensive use is made of Insulight Glass Masonry in windows to corridors, lift enclosures, etc. Roofs are formed of a mixture of glass and asphalt, with toughened glass lenses where top light is required, and heat absorbing glass on all horizontal surfaces.

● *Details of other Glass Age materials appear on the pages following the sixth report of the Committee.*

To the left : two views showing Bond Street and Albermarle Street, looking south from approximately the same point as the perspective drawing.

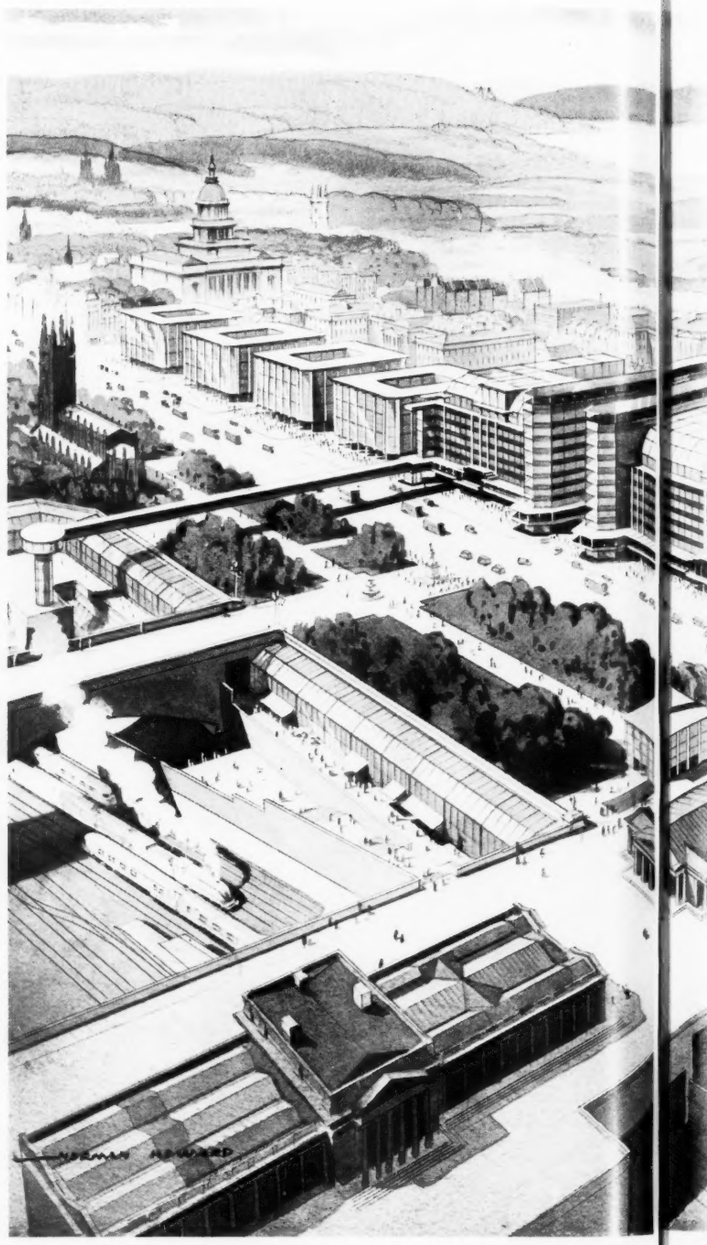
THIRD REPORT

OF THE GLASS AGE TOWN PLANNING COMMITTEE

● The third problem before the Committee was the redesigning of Princes Street, Edinburgh, and they appointed Mr. R. Furneaux Jordan, F.R.I.B.A., A.A.Dip., to work out the scheme which is illustrated on these two pages. (The composition of the Committee is given on the page before the first report.)

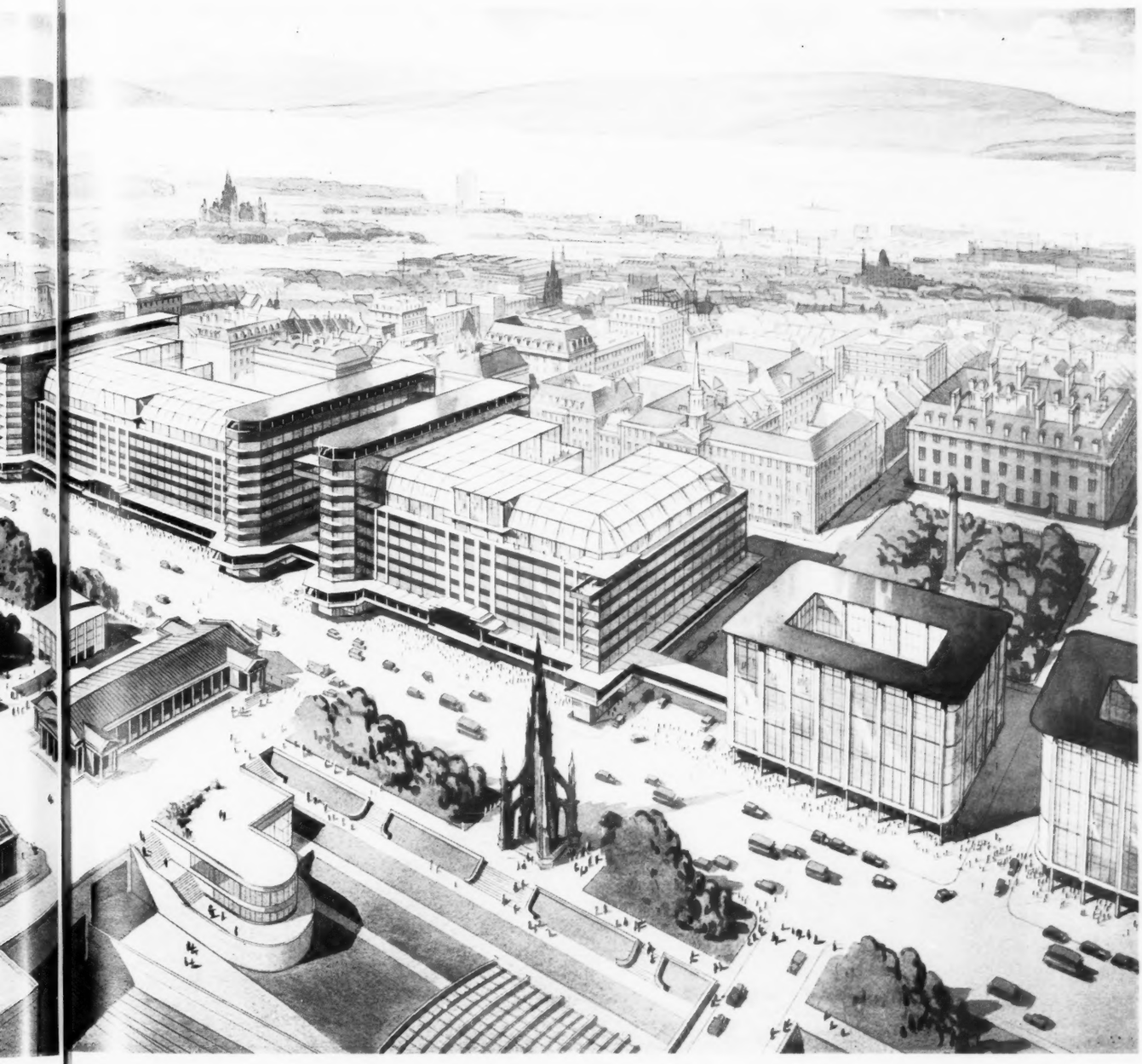
DETAILS OF THE SCHEME: In discussing the redesigning of Princes Street, the Glass Age Town Planning Committee were conscious that they were dealing with ground that might be regarded as almost sacred. Where, if not in the "New Town" of the brothers Adam, can one find majestic town planning? Nevertheless, Princes Street, which is perhaps the finest site in Europe, is architecturally a lost opportunity. The "terrace" site with its view to the Castle and to the towers and spires of the new town can never be lost, but the terrace effect might be enhanced and emphasised by a more uniform sweep of façade, by the abolition of the present conflicting commercialised buildings with their riot of signs and lettering.

The character of Edinburgh with its colour scheme of soft greens and grey does not, like some modern streets, call for highly reflecting surfaces, and yet this is the age of thin facing materials on steel frame structures.



SPECIFICATION: The new Princes Street is faced with pearl-grey "VITROLITE" with a matt surface, the long continuous windows between being of *polished Plate Glass*.

The buildings, in view of Edinburgh's climatic extremes and noisy traffic, would have double glazing, using a double glazed unit—two pieces of glass with sealed air space between. This shopping street would, from the point of view of display, have its length doubled by arranging an upper promenade with its own shop windows, these protected by a canopy in Georgian wired glass—illuminated from below. On the roofs would be great halls of "VITA" glass, with views



to the distant hills and up and down the river ; here dances, exhibitions and concerts could take place—high above the city lights.

The buildings themselves would house many small shops. Each could have its coloured "VITROLITE" facia—like medieval signs each according to its trade, without causing discord in the street itself. So indoors one could walk from shop to shop, and by bridges over the side streets, from one of these vast shopping centres to another. These bridges can, in this Glass Age, be of "ARMOURPLATE" glass and concrete and so preserve a light and airy character. Similar bridges would link up with restaurants, tucked underneath the terrace of Princes Street and looking south over the gardens.

The great glass hall on the right is the concourse of a new station—possibly the centre of an all-Scottish electric railway system ; it would link at low level with Waverley Station—itself re-roofed in glass.

BRITISH GLASS PB

• *Details of other Glass Age materials appear on the pages following the sixth report of the Committee.*

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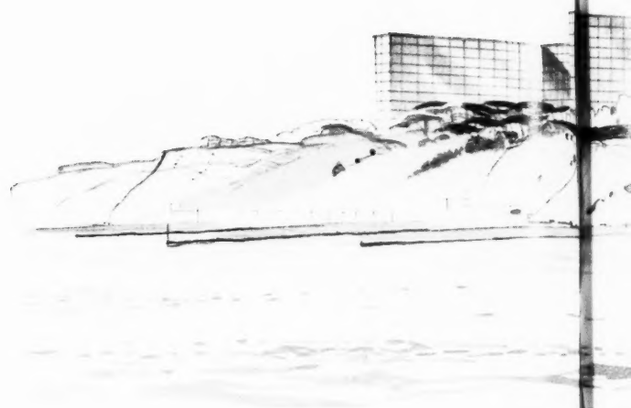
FOURTH REPORT

OF THE GLASS AGE TOWN PLANNING COMMITTEE



● The fourth problem before the Committee was the redesigning of the East and West Cliffs at Bournemouth. After discussion, they appointed Mr. Raymond McGrath, B. Arch, A.R.I.B.A. to work out the plan that is shown on the four pages that follow. (The composition of the Committee is given on the page before the first report.)

DETAILS OF SCHEME: The rebuilding of Bournemouth Front affords a good opportunity for the appropriate use of glass. The freshness of the material would add notably to the gaiety and salubrity of the resort. Briefly, this scheme for Bournemouth visualises the closing of a number of minor streets on the front and the rebuilding of existing buildings, chiefly hotels and boarding houses, on the East and West Cliffs in connected blocks located in open pleasure gardens and designed to give the maximum sea view for the maximum number of visitors.

New service roads are planned to give convenient access to all parts. The sands would be easily reached from the cliff tops by means of vertical lifts, and look-outs would connect with the higher roads.

SPECIFICATION: In the construction of the building almost the full gamut of glasses would be used in one way or another. The window area facing the sea would be as generous as possible with *double-glazed Polished Plate* on the exposed façades. The facing of the curtain walls of the buildings would be "VITROLITE," the site lending itself to a free use of colour, principally shell-pink, wedgwood, ivory and primrose. Solaria and other features would be glazed with "VITA" GLASS and balcony fronts would be in "GEORGIAN" WIRED GLASS. Restaurants and lounges would have sliding screens on the glare side glazed with neutral tinted plate glass. At ground level copious use would be made of INSULIGHT GLASS BRICKS and facings of TOUGHENED BLACK GLASS. Glass-and-concrete construction would be employed for the lower terrace, bathing pavilions, etc., and "VITROLITE" glass floor tiles for their paving.

●*Details of other Glass Age materials appear on the pages following the sixth report of the Committee.*

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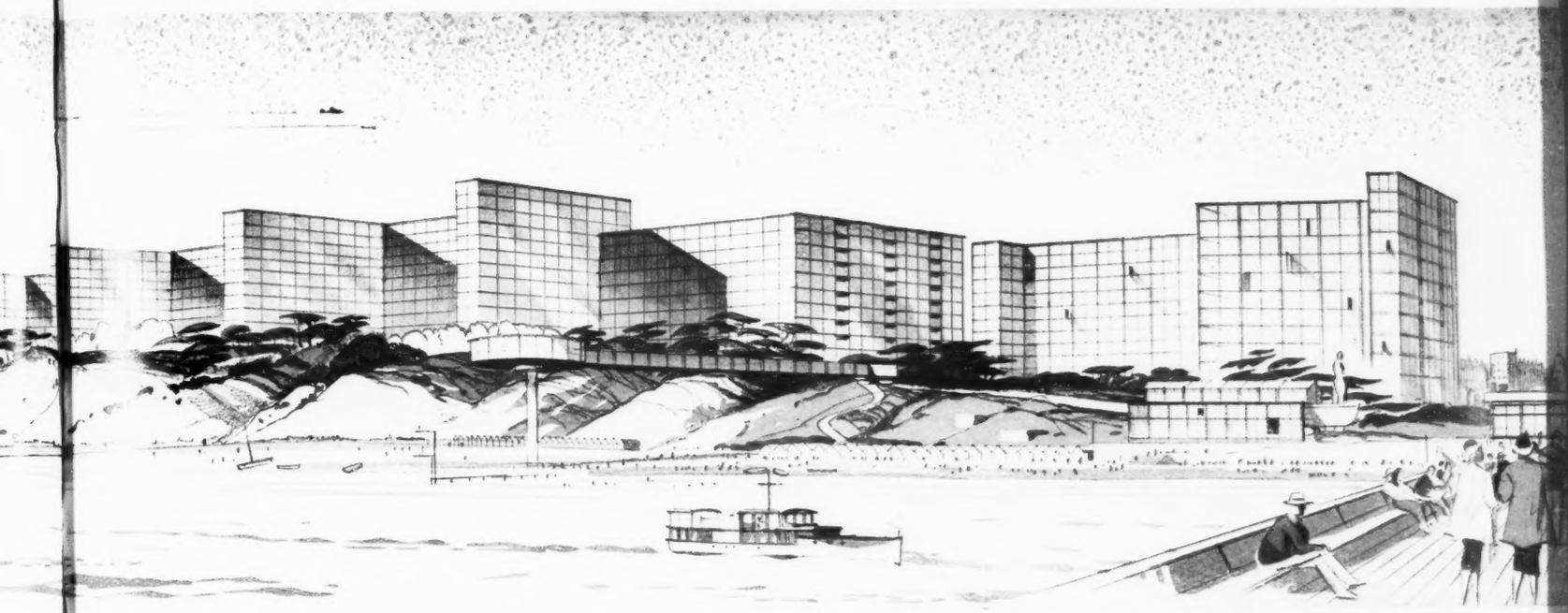

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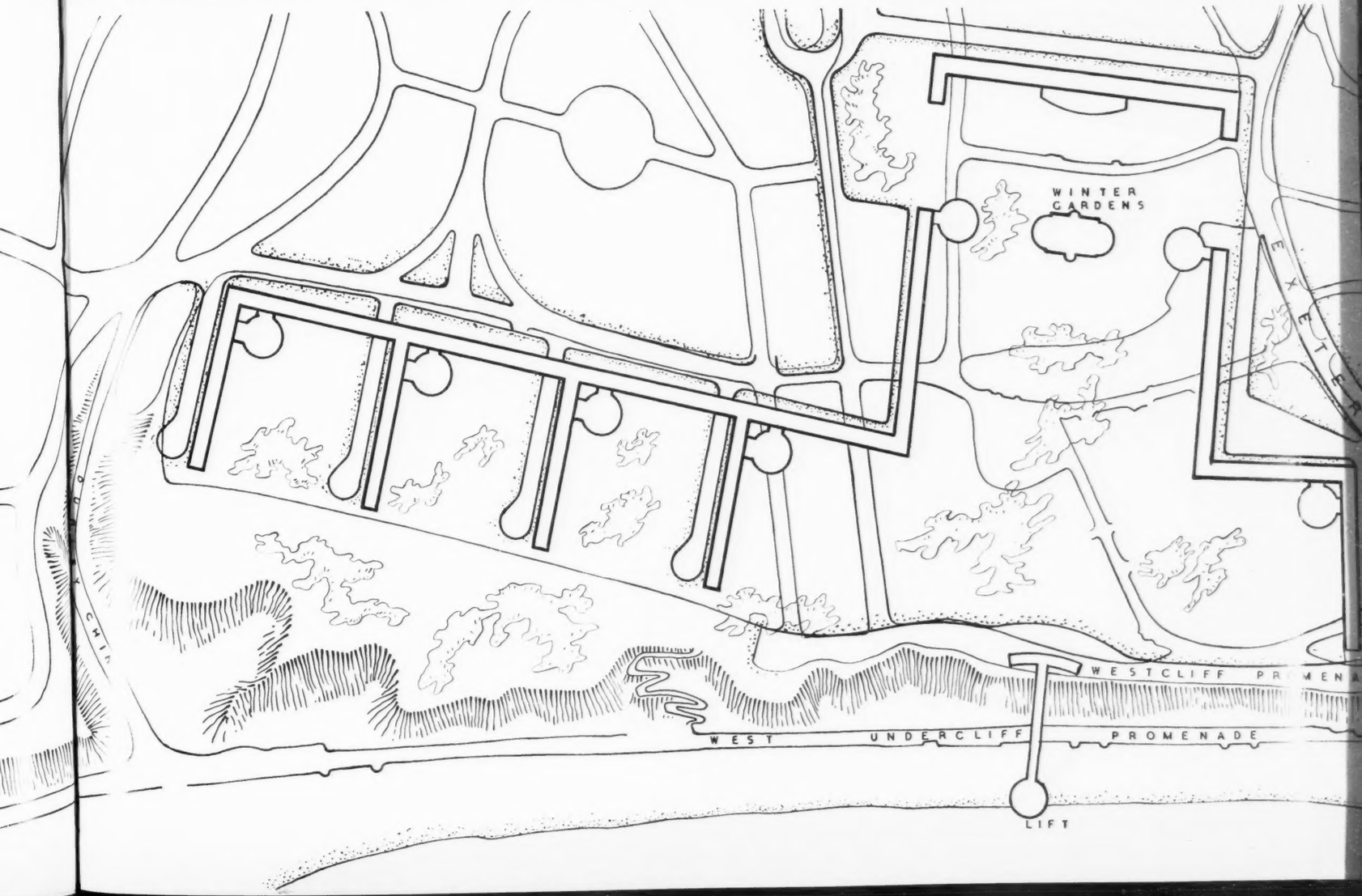

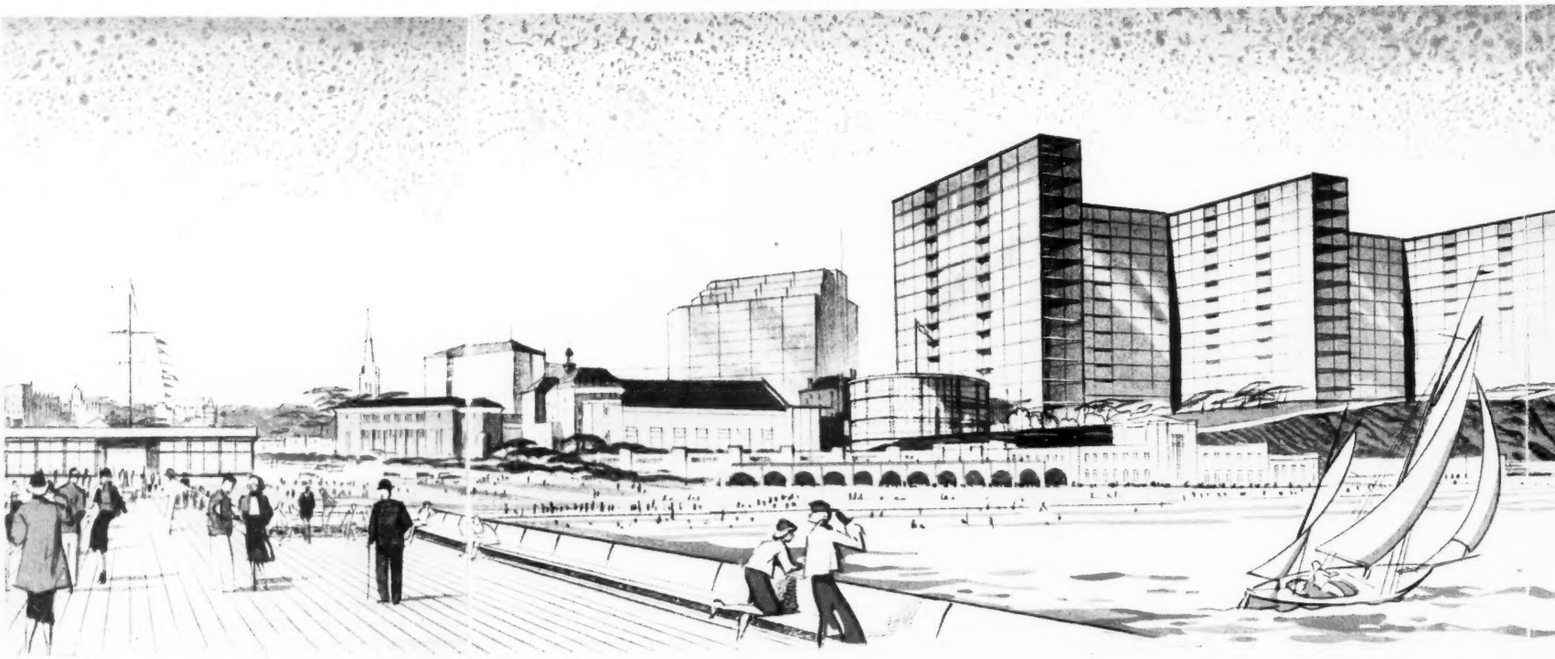

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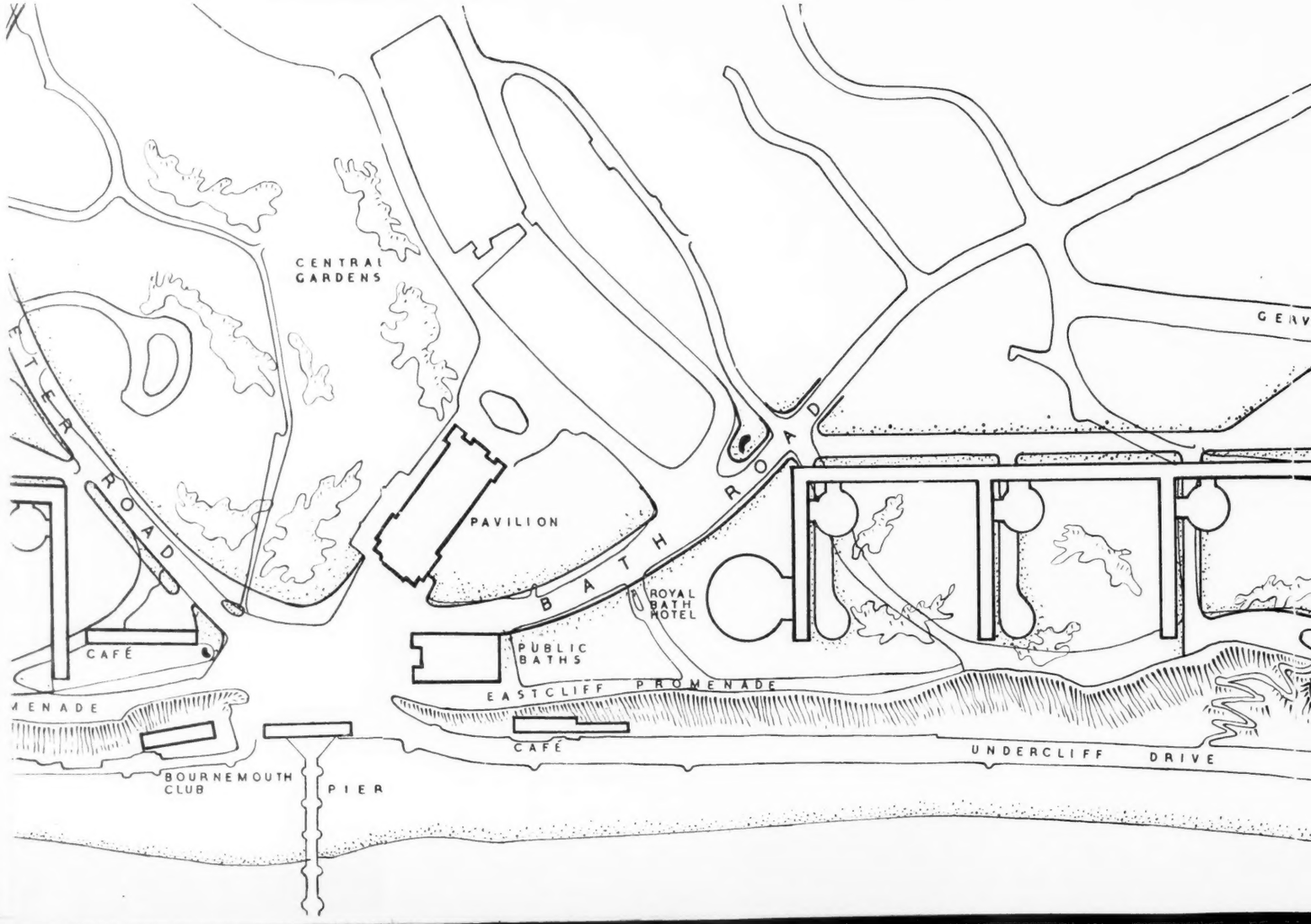

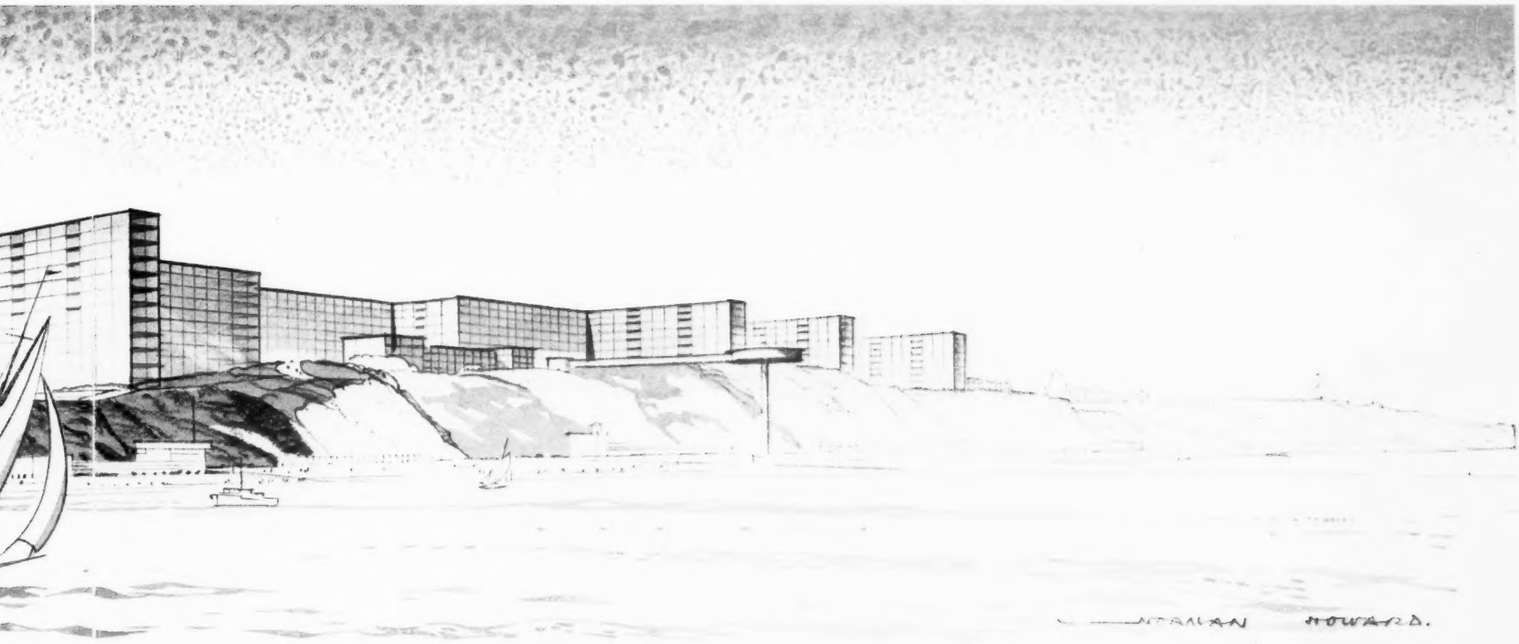

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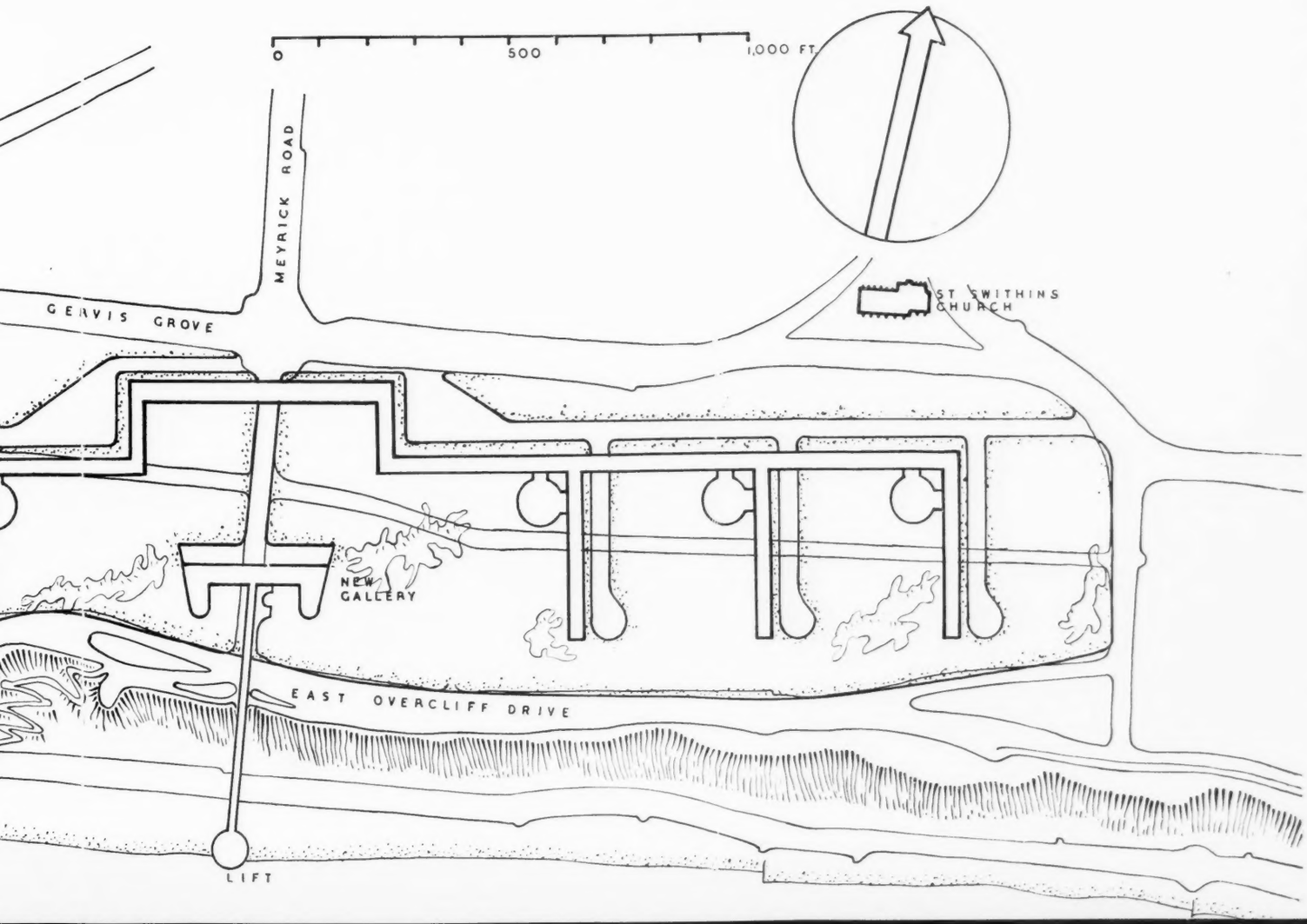

FIFTH REPORT

OF THE GLASS AGE TOWN PLANNING COMMITTEE

● The fifth problem before the Committee was the redesigning of the Liverpool Water-front. They appointed Mr. G. Grey Wornum, R.I.B.A., to work out the plan that is shown on these two pages.

(The composition of the Committee is given on the page before the first report.)

DETAILS OF SCHEME: Without embracing any important rebuilding scheme for the Liverpool Water-front, it is suggested that a thorough tidying up of Landing Stages, Pier and Riverside Station Buildings is well within the practical scope of the Glass Age to-day.

The architectural problem presented is then one of giving from the river a dignified approach to the three important existing buildings that introduce the traveller to the city itself. The irregular frontages and the diverse architectural styles of these three buildings, the Liver Building, the Cunard Building, and the Port and Harbour Offices, are framed in the proposed scheme by a substantial building placed to the right and left on the edge of the quay, with a strong horizontal link of covered approaches and café. The right hand building, through which runs the existing road approach to the floating dock, would contain Warehouses and Offices, with possible Club Rooms and a Health Centre on the top floor. The left hand building could be devoted to Trade Exhibitions both temporary and permanent.

The drawing shows part only of the new Riverside Station, which in its final length would, by rebuilding, add much to the dignity of the City's approach.

The Floating Dock itself, approached by covered alleyways, would contain shops, shelters and other amenities for passengers.

The large open space would be planned for traffic circulation, with islands and shelters, and would contain three large lawns, on the central one of which would still remain the Edward VII War Memorial. The regimental War Memorial would have its setting on the left hand side of the new office and warehouse block.

SPECIFICATION:

For the practical details of the scheme the following suggestions have been made:

Landing Stage: Café overlooking the river front. Windows glazed with Clear "ARMOUR-PLATE"
Gangways and Shelters—Georgian Wired Cast and Polished Georgian Wired.

Exhibition Building: *Exterior:* Walls of Insulight Glass Masonry with the introduction of opening casements. Structural supports and entrance features faced with "VITROLITE."
Top Side Lighting—Rough Cast Double Rolled.
Flat Roof—Toughened Glass Lenses set in concrete.

Office Building: *Exterior:* Insulight Glass Masonry walls with opening casements. These casements to be glazed with Polished Plate in double glazed units to provide insulation against outside traffic noise and to permit a view over the river. Structural supports and entrance features faced with "VITROLITE."

Booking Hall: Windows glazed with Georgian Wired Cast.
Tower—Insulight Glass Masonry, P.B.3 and P.B.3 radiused corner brick.
Points to note: Open position exposed to gale. Noise from traffic. Structural glass and glass to provide insulation would be used.

BRITISH GLASS P.B.

● *Details of other Glass Age materials appear on the pages following the sixth report of the Committee.*

SIXTH REPORT

OF THE GLASS AGE TOWN PLANNING COMMITTEE

● In this sixth and last problem the Committee appointed Mr. F. R. S. Yorke, A.R.I.B.A., to work out the plan. (The composition of the Committee is given on the page before the first report.)

OUTLINE OF THE SCHEME: Liverpool Street, one of the busiest railway stations in the world, discharges a great volume of traffic into a maze of congested streets. This scheme proposes a rebuilding of both Liverpool Street and Broad Street Stations, and a replanning of the space to the south of them, to give a *place* common to both, avoiding congestion by forming in a sense a harbour—away from through-traffic roads and used by station traffic alone.

The approach from the west is widened, and, with station buildings moved a little to the north of their present site, a direct approach is gained for departure traffic. The placing of the rails has not been changed, and the existing taxi route for arrival traffic, which runs from north to south through the station, has been preserved, and fits in with the new one-way traffic scheme.

Several acres of virgin building site are created by roofing the railway tracks—a simple matter with electrification of rails—making a fine opportunity for high buildings with wide spaces between them. A road runs from west to east across the tracks, on the line and level of the present bridge. Existing levels make it possible to enter the main booking hall at pavement level, and to descend from this to the platforms. Around the booking hall are railway company's offices, and over it restaurants, cafes and bars, continued across Bishopsgate as a foyer to the hotel.

The district to the south of the station, as far as the Bank, is cleared and rebuilt with tall office blocks, widely spaced with gardens between, as the first stage in the replanning of the City.

SPECIFICATION OF MATERIALS SUGGESTED:

Broad Street Station. Reinforced concrete construction.

Roof. The Roof provides top lighting to the station and platforms by the introduction of toughened lenses in the concrete.

Wall Screens. These are glazed with Georgian wired cast glass.

L.N.E.R. Station. Railway office block and block of offices over the station. Reinforced concrete construction faced with Portland Stone slabs, with continuous horizontal windows glazed with ¼" polished plate glass.

The building connecting the station and hotel (hotel in background) is a restaurant and hotel foyer. The roof is of concrete construction with circular rough cast domes raised on concrete curbs. These are used to give an evenly diffused light throughout the full width of the building.

Hotel. Designed to provide each room with a closed balcony, thus eliminating the noise of traffic. The windows of the rooms and the balconies are double glazed with ¼" polished plate glass.

Canopies. Again, use has been made of toughened lenses.

BRITISH GLASS P B

● *Details of other Glass Age materials appear on the following three pages.*

MATERIALS FOR THE GLASS AGE

POLISHED PLATE GLASS

THICKNESSES	MAXIMUM MANUFACTURING SIZES (See Footnote)*	APPROXIMATE WEIGHT PER SQUARE FOOT
$\frac{1}{8}$″–1$\frac{1}{4}$″ and 1$\frac{1}{2}$″ if necessary	$\frac{1}{8}$″–$\frac{5}{32}$″ 100 united ins.	2 lbs
	$\frac{1}{8}$″–$\frac{3}{16}$″ 90″ × 50″	2$\frac{3}{4}$,,
	$\frac{3}{16}$″ 100″ × 72″	
	$\frac{1}{4}$″ 165″ × 110″	3$\frac{1}{2}$,,
	$\frac{5}{16}$″–$\frac{3}{8}$″ 180″ × 130″	4$\frac{1}{4}$–5$\frac{1}{4}$,,
	$\frac{3}{8}$″ 280″ × 130″	5$\frac{1}{4}$,,
	$\frac{1}{2}$″ 156″ × 96″	7 ,,
	$\frac{5}{8}$″ 156″ × 96″	8$\frac{3}{4}$,,
	$\frac{3}{4}$″ 156″ × 96″	10$\frac{1}{2}$,,
	$\frac{7}{8}$″ 144″ × 90″	12$\frac{1}{4}$,,
	1″ 144″ × 90″	14 ,,
	1$\frac{1}{4}$″ 108″ × 72″	17$\frac{1}{2}$,,

* *Maximum manufacturing sizes are not necessarily maximum safe glazing sizes.*

Qualities :

G.G. for Ordinary Glazing Purposes
S.G. for Selected Glazing Purposes
S.Q. for Silvering Quality

N.B.—Plate Glass should be used where undistorted vision is necessary and where it is desired to enhance the exterior appearance of buildings.

Polished Plate Glass is also available in various tints, namely Pink, Greens, Steel Blue, Standard Blue, Visor Blue, Amber, Champagne and Neutral Tinted, $\frac{3}{16}$″ and $\frac{1}{4}$″ thick.

TWINPLATE

A polished plate glass produced by a new process, giving greatly improved flatness with almost complete absence of wave.

CLEAR SHEET GLASS

MANUFACTURED BY

THE MOST MODERN FLAT DRAWN PROCESS

18 oz. to 32 oz.	MAXIMUM MANUFACTURING SIZES	
$\frac{3}{16}$″, $\frac{7}{32}$″, $\frac{1}{4}$″	18 oz.– 72″ × 48″	approx. $\frac{1}{12}$″
Thinner glass is made (e.g. 8 ozs. approximately 1 mm. thick), but is not a glazing material, being chiefly used for photographic and scientific purposes	24 oz.– 84″ × 50″	approx. $\frac{1}{10}$″
	26 oz.– 84″ × 54″	approx. $\frac{1}{8}$″
	32 oz.– 84″ × 60″	approx. $\frac{5}{32}$″
	$\frac{3}{16}$″, $\frac{7}{32}$″, $\frac{1}{4}$″ –120″ × 84″	

Ordinary Glazing Quality
Suitable for general glazing purposes. Invoiced as and packages branded "O.Q."

Selected Glazing Quality
For glazing work requiring a selected sheet glass above the ordinary glazing quality. Invoiced as and packages branded "S.Q."

Special Selected Quality
For high-grade work where a superfine sheet glass is required. Invoiced as and packages branded "S.S.Q."

Sheet glass can also be supplied with designs worked upon its surface in Enamelled, Mechanical Embossed, Crystalline and other processes

CATHEDRAL AND FIGURED ROLLED GLASS— WHITE AND TINTED

Are available in :—

Non-formal patterns, i.e.
CLEAR CATHEDRAL
PLAIN CATHEDRAL
DOUBLE ROLLED CATHEDRAL
RIMPLED CATHEDRAL
WATERWITE CATHEDRAL
CLOUDED CATHEDRAL

Semi-formal patterns, i.e.
NOS. 1, 2 and 3 HAMMERED CATHEDRAL

Formal patterns, Figured Rolled, i.e.
ARCTIC and SMALL ARCTIC
RIPPLED
AMAZON
MOROCCO, LARGE and SMALL
MAJESTIC, ETC.

Diffusing patterns, i.e. KALEIDOSCOPE
PINHEAD MOROCCO

Available in thicknesses of $\frac{1}{8}$″ and $\frac{1}{4}$″. Arctic, Clear and Plain Cathedral glasses are also available in a thickness of $\frac{3}{16}$″. Usual manufacturing sizes 90″/120″ long × 36″/42″ wide. Certain patterns can be supplied in a width of 48″.

WIRED GLASS

Georgian ($\frac{1}{2}$″ square mesh electrically welded).

Hexagonal mesh, about $\frac{1}{2}$″.

Ribbed (wire rolled) is obtainable in hexagonal mesh.

Plain (wired cast) is obtainable in Georgian and hexagonal mesh, both in a thickness of $\frac{1}{4}$″.

Wired Glass can also be supplied polished in a thickness of $\frac{1}{4}$″ in either of the above meshes.

Wired "VITA" (Georgian mesh) $\frac{3}{16}$″ thick, and wired Arctic (hexagonal mesh) $\frac{1}{4}$″ thick can also be supplied.

Wired Glass is the only known effective form of fire-retardant glazing. Awarded the British Fire Prevention Committee's Standards, Classification "B."

"ARMOURLIGHT"

A NEW GLASS AGE PRODUCT

Our toughening process is now applied to a number of moulded and blown products, e.g. Electrical Insulators, Roof lights, Pavement lights, Well glasses, Floodlight glasses, etc.

"ARMOURLIGHT" is the registered trade mark of Pilkington Brothers Limited.

ROLLED GLASS

Rough Cast Double Rolled Glass $\frac{3}{16}$″, $\frac{1}{4}$″ and $\frac{3}{8}$″. Plain Rolled Plate (Ribbed) $\frac{1}{8}$″, $\frac{3}{16}$″ and $\frac{1}{4}$″.

"VITA" GLASS

"VITA" Glass has been reported on by the Building Research Station, and the report confirms that the *properties of "VITA" Glass are absolutely permanent.*

"VITA" is the registered trade mark of Pilkington Brothers Limited, St. Helens. "VITA" Glass is obtainable through local glass merchants, plumbers, glaziers and builders.

SUPPLIES ARE OBTAINABLE THROUGH THE USUAL TRADE CHANNELS

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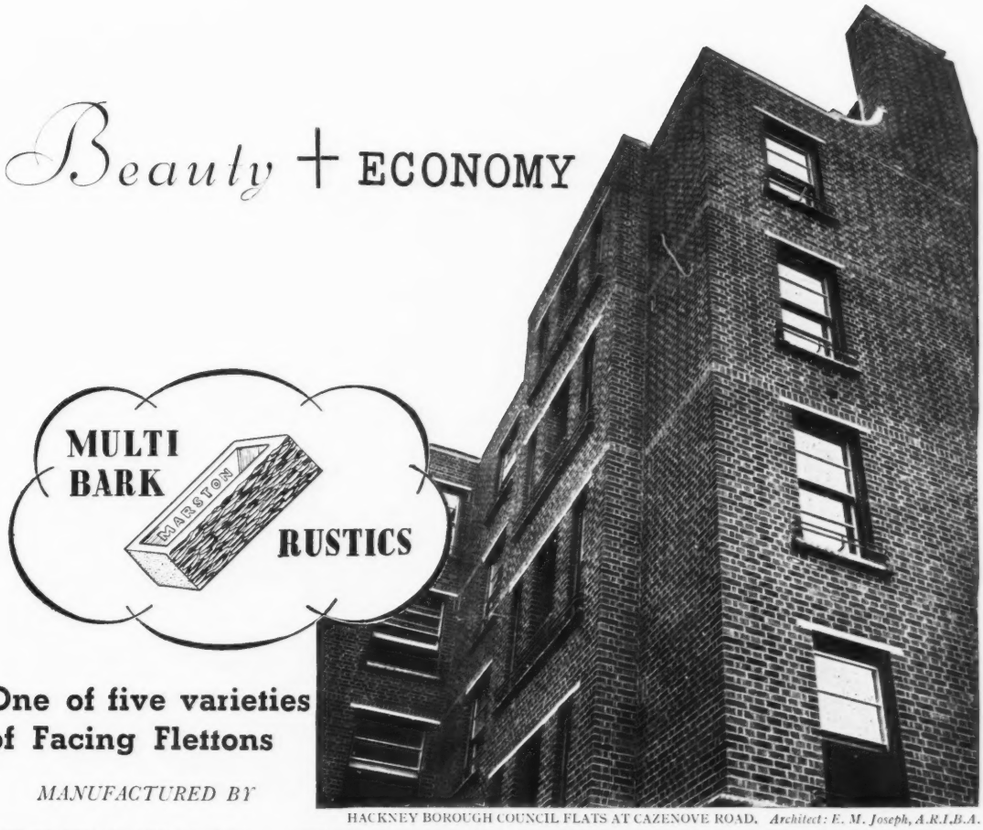
Beauty + ECONOMY

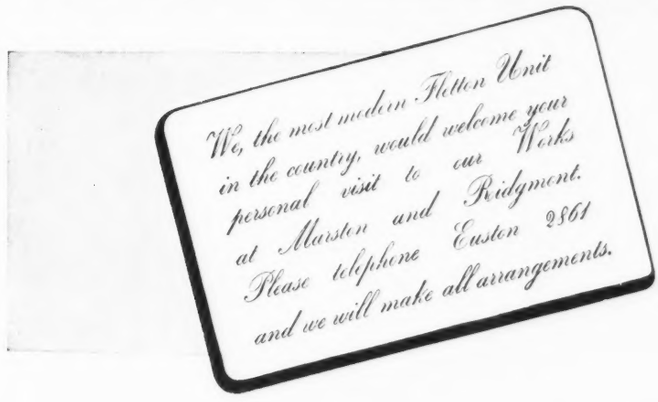


One of five varieties of Facing Flettons

MANUFACTURED BY

HACKNEY BOROUGH COUNCIL FLATS AT CAZENOVE ROAD. *Architect: E. M. Joseph, A.R.I.B.A.*

MARSTON VALLEY BRICK CO LTD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in the country, would welcome your
personal visit to our Works
at Marston and Ridgmont.
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and we will make all arrangements.

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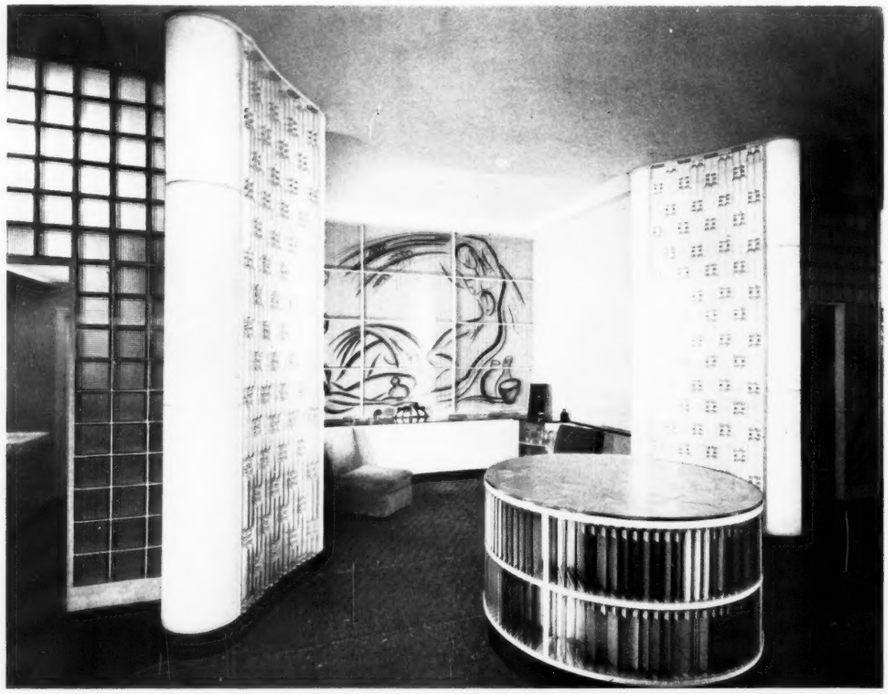
Trade News & Reviews

By

BRIAN

GRANT



Glass display in this age of Glass—the central bay at the Pilkington showrooms in Piccadilly.

1938—1939

Nineteen thirty-eight, as I write these notes, has but three weeks of life left. In precisely twenty-one days multitudes of people in divers parts of the globe will sing riotously and sentimentally; they will blow toy trumpets and wave paper flags; in famous squares in many of the cities of the world John Citizen and his wife, (or wives), will bid adieu to the *old* and bon voyage to the *new*.

I, too, will be somewhere on the night of December thirty-first. It seems probable that I shall, as on so many previous New Year's Eves, wear a highly coloured paper cap and behave a trifle foolishly.

And on the morning after, lots and lots of New Year resolutions will be made, —they will all be broken, shattered painfully, most of them, even before these few lines of mine have been transformed into the cold legibility of printer's ink.

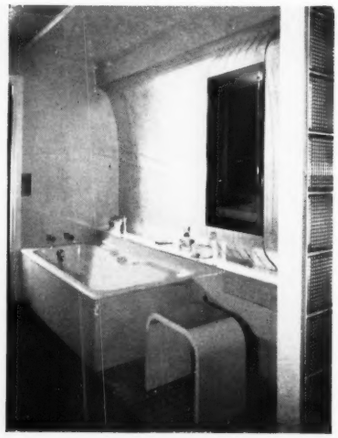
New Year Resolutions

Heavens, what noble suggestions one could offer to those engaged in the very noble industry of building.

I am advised, fortunately perhaps, that the amount of space at my disposal is strictly limited and I propose therefore to preach the doctrine of intelligent showroom display, as exemplified by the illustrations to these notes.

Two new Showrooms

At 63 Piccadilly, Messrs. Pilkington (of GLASS AGE fame), have recently



Glass in the conference room and in the bathroom. Architect for the Pilkington showrooms—Kenneth Cheesman.

"We claim your loyalty
for an architecture worthy
of this age,
worthy of the future."

M.A.R.S. GROUP. 1938

To reconcile the eternal problems of utility and beauty, and to make his work a fit expression of the spirit of his time, the architect searches for new methods and new materials. Some materials —steel, concrete, glass, for example, are now familiar in the contemporary street-scene. Others, like plastics and aluminium, with a promising future, are fast gaining popularity. Consider aluminium: light, beautiful, one-third the weight of steel, it can be cast, forged, or extruded into a thousand useful shapes for construction or decoration. In anodised finishes, it is making possible new design-forms, new colour effects and new decorative refinements.

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A.R.5

The Bakelite offices and showrooms designed by Oliver P. Bernard. Left: a corner of the waiting room; right: Bakelite-and-glass partitions and doors in the corridor.

opened their new showrooms. These showrooms have been designed (architect: Kenneth Cheesman) in order to provide a practical demonstration of the contemporary uses of glass as a structural and decorative material.

The photograph at the head of the previous page shows the centre bay in the showrooms. The decorative glass piers are built up of bent No. 4 fluted glass and special white metal—the inside face of the glass being sandblasted. The screen wall at the end of the bay consists of panels of pale straw-coloured cathedral glass with a decorative design applied in enamel and fired.

Between the piers, to right and left, decorative panels built up with (believe it or not) clear rolling-pins.

The rolling-pins are mounted on to clear plate glass and illumination from concealed opal tube lamps gives a real liveliness to the panels.

The two smaller photographs at the bottom of the previous page show:

Left, the conference room—the end wall is of glass brick construction; the other walls are faced with pink polished plate glass.

Right, a bathroom carried out in a combination of Wedgwood vitrolite and pink silvered vitroflex. The floor of this bathroom is laid in pink silvered glass tiles.

• • •

From Piccadilly we take a bob's worth of taxi to Hobart House, Grosvenor Place. This recently completed building contains the new London offices and showrooms of Bakelite Ltd. Here again the manufacturers have incorporated their own material throughout the design and construction. In the board room we see simple wall panelling in vertical convex units, of laminated board faced with dull-finished, buff-coloured bakelite veneer spaced by vertical teak fillets.

At the head of this page is shown: Left, a corner of the waiting room. As an example of decorative technique in wainscot work this room contains another application of bakelite decorative sheet in the form of small panels slightly proud of intersecting margins of the same material in a darker colour. Right, corridor partitions and flush doors in bakelite and glass. Oliver P. Bernard was the architect for these Bakelite offices and showrooms.

• • •

Architects will enjoy a visit to both these showrooms. Manufacturers of other materials should, if possible, make a tour of inspection.

I know something about showrooms, I have been lured into so many of them in my not-so-young life and let me say this to manufacturers in general — for 1939 resolve, as early as possible, to put your house in order.

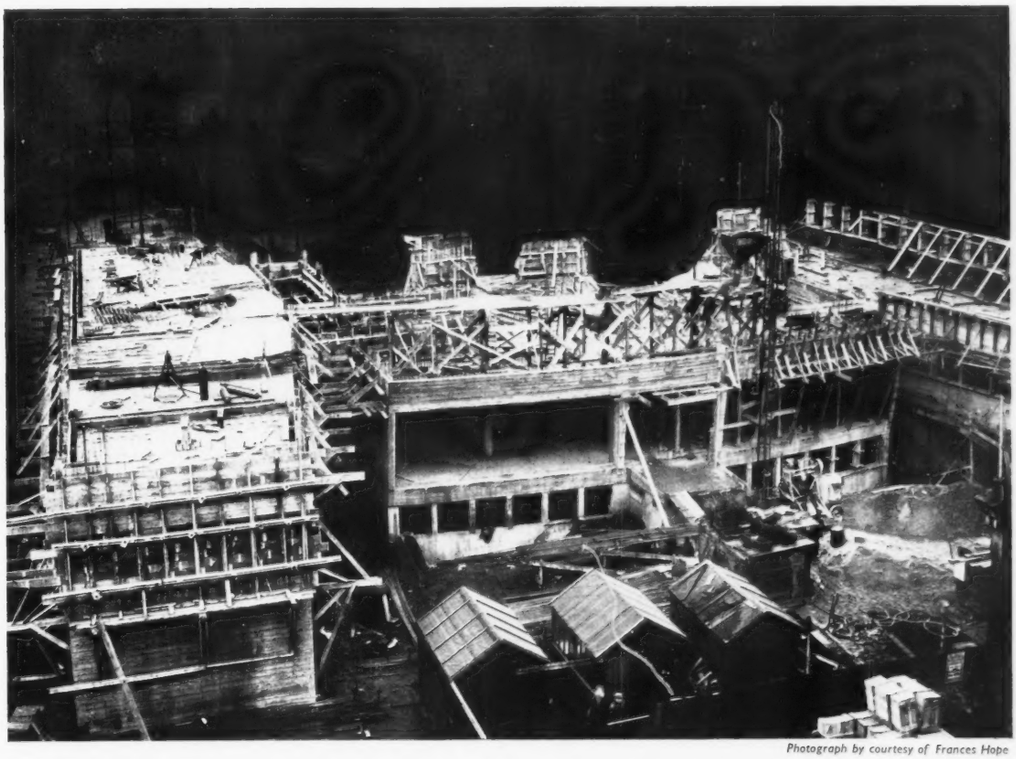
Do not rely on samples, brochures and the *poisonality* of your sales manager to *put your story across*. Let your offices and showrooms be a practical and convincing demonstration of how your material can be intelligently incorporated in decorative or structural design.

It is a good idea, and not entirely original, to employ an architect to produce a practical and attractive interpretation of whatever it is you are trying to say.

The Bakelite offices and showrooms designed by OliverP. Bernard. The Board Room.

FINSBURY HEALTH CENTRE

Architects :—Messrs. Tecton



Photograph by courtesy of Frances Hope

PROGRESS PHOTOGRAPH
OF
THE FINSBURY HEALTH CENTRE
SHOWING THE REINFORCED
CONCRETE CONSTRUCTION

Other recent contracts include :

Highpoint I and II
(*Architects :* Messrs. Tecton)

Flats at Brixton
(*Architect :* Edwin D. Griffith, L.R.I.B.A.)

Factory at Nottingham
(*Architects :* Ernest Cannell & Son)

Warehouse at Avonmouth
(*Consulting Engineer :* Dr. Oscar Faber, O.B.E., D.C.L., D.Sc., M.Inst.C.E.)

Reinforced Concrete Works at the Zoological Gardens, London and Dudley
(*Architects :* Messrs. Tecton)

J. L. KIER & Co. Ltd.,

for reinforced concrete design and construction

ALLINGTON HOUSE · 142 VICTORIA STREET · LONDON, S.W.1

The Buildings Illustrated

Finsbury Health Centre.

Architects : Tecton.

The general contractors were Patman and Fotheringham, Ltd. Among the sub-contractors and craftsmen were the following: Road Foundation Co., Ltd. (demolition), J. L. Kier & Co., Ltd. (reinforced concrete construction), Permanite, Ltd. (asphalt, roofing felt), Carter & Co., Ltd. (external tiling), Ramsdens (London) Ltd. (internal tiling), V. Naudeau, Ltd. (glass bricks), Thermolux Glass Co., Ltd. (glass), G. N. Haden and Sons, Ltd. (panel heating, boilers, electric wiring and heating, ventilation, bells, internal telephones), Gas Light & Coke Co., Ltd. (gasfitting), Davis Bennett & Co., Ltd. (sanitary fittings), Carraratile, Ltd. (terrazzo stairtreads), Oscar Kanter, Ltd. (Wehag door furniture), Williams and Williams, Ltd. (casements, window furniture), London Telephone Co. (telephones), F. A. Norris & Co., Ltd. (folding gates, iron staircases), Hill and Smith, Ltd. (folding gates), Haywards, Ltd. (rolling shutters), Tidmarsh and Sons (sunblinds), John Hull and Sons, Ltd. (dark room blinds), D. Sebel & Co., Ltd. (metalwork), L. E. Vigar and Son, Ltd., and H. Mills and Sons, Ltd. (joinery), F. G. White & Co., Ltd. (carved crest and marble), Oetzmann, Ltd. (curtains), London Workshops for the Blind (mats), Ronco, Ltd. (office furniture and fittings, lockers), Synchromatic Time Recording Co., Ltd. (clocks), Harris the Sign King (external signs), Baker and Son (internal signs), Photographic Spraying Co., Ltd. (map in entrance hall), Aveling-Barford, Ltd. (disinfecting equipment), Newton and Wright, Ltd. (X-Ray equipment, X-Ray high tension units), International Refrigerator Co., Ltd. (mortuary refrigerator), Kinematograph Equipment Co., Ltd. (cinema screen), British Vitrolite Co., Ltd. (mirrors and Vitrolite shelves and backings), Frigidaire, Ltd. (refrigerator), Minimax, Ltd. (fire extinguisher), New Light Fittings, Ltd., Oswald Hollmann, Ltd., General Electric Co., Ltd., Ascog, Ltd., Troughton and Young, Best and Lloyd, Ltd. (electric lighting equipment), Watson and Sons (electrical treatment equipment, X-Ray equipment, X-Ray combined couch and screening stand), L. Porro, Ltd. (dental equipment), Art Metal Construction Co., Ltd., Pel, Ltd., Tan-Sad Co., Ltd. (office furniture and fittings), Thonet Bros., Finmar, Ltd., Kingfisher, Ltd., Frederick Parker and Sons, Ltd. (furniture), The Medical Supply Association, Ltd. (general medical equipment), Sumerling & Co., Ltd., Rosebery Metal Works, Co., A. L. Hawkins & Co., Ltd., C. F. Thackray, Ltd., Allen and Hanbury (trolleys, cabinets, operating table, stools, drums, electric sterilizer and miscellaneous medical equipment), Willen Bros. (foot clinic equipment), A. L. Hawkins & Co., Ltd. (Urological chair), Shanks & Co., Ltd. (mortuary slabs), Bull Motors, Ltd. (motors), Stic B. Paint Sales, Ltd., (external paint finish).

• • •

House at Angmering on Sea.

Architects: F. R. S. Yorke & Marcel Breuer.

The general contractors were Z. Peskett & Co., who were also responsible for central heating and electric wiring. Among the sub-contractors and craftsmen were the following : Twisteel Reinforcement, Ltd. (reinforced concrete), Ruberoid Co., Ltd. (Astos dampcourses, Ruberdal roofings), Slate Slab Products, Ltd. (cills), G. A. Harvey & Co., Ltd., (gates), Wheatly & Co., Ltd. (tiles), Vitrea Drawn Sheet Glass Co., Ltd., Chance Bros., & Co., Ltd. (glass), Cork Insulation Co., Ltd. (cork tile floors stairtreads), Eagle Range & Grate Co., Ltd. (gas coke fire), Troughton and Young, Ltd. (electric light fixtures), O'Brien Thomas & Co., Ltd. (sanitary fittings), Dryad Metal Works, Ltd. (door furniture), Williams & Williams, Ltd. (casements and window

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1939
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FOR

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Architects:— Messrs. TECTON

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BUILDERS SINCE 1800 ISLINGTON, N.1

W/P705

An example of panelling in coloured Traffolyte at a well-known London store.

METROPOLITAN-VICKERS ELEC. Co. Ltd., Trafford Park, MANCHESTER, 17

furniture), Lenscrete, Ltd. (glass concrete), Haskins (rolling shutters for garage), Joseph Avery & Co., Ltd. (sunblinds), Nobel Chemical Finishes, Ltd., Screetons (paint), J. Christopher and Sons (lifts).

• • •

Two Houses at Eton College.

Architects : F. R. S. Yorke & Marcel Breuer.

The general contractors were Edward and Chas. Bowyer. Among the sub-contractors and craftsmen were the following : Ruberoid Co., Ltd. (Astos dampcourses), Brick Marketing Co., Ltd. (bricks), Honeywill and Stein, Ltd. (Heraklith partitions), Vitrea Drawn Sheet Glass Co., Ltd. (glass), Chance Bros. & Co., Ltd. (cross reeded glass), Charles P. Kinnell & Co., Ltd. (central heating), Cork Insulation Co., Ltd. (floorings), W. W. Sympar, Ltd. (electric wiring), Troughton and Young, Ltd. (electric light fixtures), Ferranti, Ltd., (electric heating), Adamsez, Ltd. (sanitary fittings), Dryad Metal Works, Ltd. (door furniture), Williams and Williams, Ltd. (casements), Birmingham Sculptors (fireplaces), Boulton and Paul, Ltd. (garage buildings), Nobel Chemical Finishes, Ltd., Screetons (paint).

• • •

House at Lee-on-Solent.

Architects : F. R. S. Yorke & Marcel Breuer.

The general contractors were F. Bradford & Co., Ltd. Among the sub-contractors and craftsmen were the following: Wheatly & Co., Ltd. (tiles), D. Anderson and Sons, Ltd. (Thermotile special roofings), Vitrea Drawn Sheet Glass Co., Ltd., Chance Bros. & Co., Ltd. (glass), Venesta, Ltd. (plywood squares for flooring), Charles P. Kinnell & Co., Ltd. (central heating), F. W. Cook & Co. (electric wiring, fittings, etc.), Troughton and Young, Ltd. (electric light fixtures), Adamsez, Ltd. (sanitary fittings), Cork Insulation Co., Ltd. (stairtreads), Dryad Metal Works, Ltd. (door furniture), Williams and Williams, Ltd. (casements and window furniture), Lenscrete, Ltd. (glass concrete), Haskins (rolling shutters for garage), Joseph Avery & Co., Ltd. (sunblinds), J. Starkie Gardner, Ltd. (metalwork), British Vitrolite Co., Ltd. (Vitrolite—bathroom glass wall linings), Nobel Chemical Finishes, Ltd. (Dulux glossy paint), Screetons (paint), James Clark and Son, Ltd. (glass wall in dining-room), Finmar, Ltd. (furniture), Jack Killick (built-in furniture), Peerless Kitchen Cabinets, Ltd. (kitchen cabinets), Bowman Bros., Ltd. (carpets), Coldair, Ltd. (refrigerator), Synchronome Co., Ltd. (clocks), Voxsan, Ltd. (swimming pool water purification).

• • •

Synagogue at Brighton.

Architect : Edward Lewis.

The general contractors were T. J. Braybon and Sons, Ltd. Among the sub-contractors and craftsmen were the following : Blockleys, Ltd. (hand-made bricks), J. Rooke and Sons, Ltd. (stone), John Every, Ltd. (structural steel), Pugh Bros., Ltd. (glass), G. Knight, Ltd. (electric wiring and heating), Strand Electric and Engineering Co., Ltd. (electric light fixtures), George Freeman, Ltd. (sanitary fittings), Taylor Pearse & Co., Ltd. (door furniture), John Kibbs, Ltd. (metal windows), Theatre and Cinema Equipment, Ltd. (textiles), Arthur Sanderson and Sons, Ltd. (wallpapers).

• • •

Cavendish High Tension Laboratory, Cambridge.

Architects : Adams, Holden & Pearson.

Associated Architect : H. G. Cherry.

The general contractors were Coulson and Son, Ltd. Among the sub-contractors and craftsmen were the following: Limmer and Trinidad Lake Asphalte Co., Ltd. (asphalt), Indented Bar and Concrete Eng. Co., Ltd. (reinforced concrete), Dorman Long & Co., Ltd. (structural steel), Frederick Braby & Co., Ltd. (copper flat roofing), Acme Flooring and Paving Co., Ltd. (wood block flooring), Richard Crittall & Co., Ltd. (central heating, ventilation), Troughton and Young, Ltd. (electric wiring), Doulton & Co., Ltd., Baird and Tatlock, Ltd., John Bolding and Sons, Ltd. (sanitary

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AIR RAID SHELTERS
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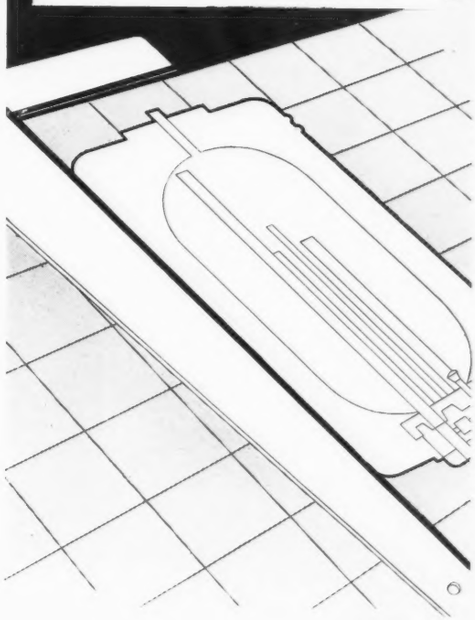

First thoughts are often best . . .

The Sadia, for instance, was the original electric heater and is still the best to-day. Automatic, unfailing, delightfully simple. At the turn of the tap hot water comes pouring—piping hot water, at any hour of the day or night. There are no fumes, no danger.

The Sadia is quite remarkably economical. Its first cost is small, installation costs are next to nothing, as no flues or structural alterations are needed, and on most tariffs running costs are very low. With its simple rounded shape and gleaming finish, the Sadia looks perfectly at home in modern kitchens or bathrooms. At present it is at home in no fewer than two hundred thousand of them.

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The Sadia Engineer will supply full details of the range of models, their price, their consumption and how little they cost to install. The address is: Aidas Electric Ltd., Sadia Works, Rowdell Road, Northolt, Middlesex. Phone: Waxlow 1607.

SADIA AUTOMATIC ELECTRIC WATER HEATERS

fittings), Nettlefold and Sons, Ltd. (door furniture), C. E. Welstead, Ltd. (casements), Albert J. Shingleton, Ltd. (sunblinds), Light Steelwork, Ltd. (metalwork), Herbert Morris, Ltd. (cranes), Bull Motors, Ltd. (motors).

• • •

Laboratory for the Metropolitan Water Board.

Architects : **Stanley Hall and Easton and Robertson.**

The general contractors were Walter Lawrence and Son Ltd. Among the sub-contractors and craftsmen were the following : Dent and Hellyer, Ltd. (plumbing and cold water services), Val de Travers Asphalte Paving Co. (asphalt and roof tiling), Young & Co. (steelwork), R. Crittall & Co. (heating and hot water ventilation), Diespeker & Co. (hollow tile floors and terrazzo work), Croft Granite Co. (north elevation window cills and paving stones), Shanks & Co. (sanitary fittings), C. E. Welstead, Ltd. (metal windows), Grierson, Ltd. (electrical works), Lenscrete, Ltd. (glass windows), J. W. Gray and Son, Ltd. (lightning conductor), Baird and Tatlock (London), Ltd. (laboratory fittings), Pickerings, Ltd. (lift), Cork Insulation Co. (cork and roofs, etc.), Bromsgrove Guild, Ltd. (architectural metalwork — gates, railings, staircase, balustrades, etc.), Roberts, Adlard & Co. (tiling), A. Goldstein & Co. (Glass Merchants), Ltd. (glass), N. F. Ramsay & Co. (door furniture), Birmingham Safe Co. (safe), F. Braby & Co. (external copper work), North British Rubber Co. (rubber flooring), W. W. Jenkins & Co., Ltd. (marble work), J. P. White and Sons, Ltd., D. Burkle and Son, Ltd. (furniture), Cecil Ern & Co. (bronze door), J. Edginton (flagstaff), B. and B. Plastering, Ltd. (plastering to special rooms), British Art Tile Co. (tiles to fountain pool), Hollis Bros. (hardwood), Runnymede Rubber Co. (rubber flooring), Davis Gas Stove Co. (gas fires), British Vitrolite Co. (splashbacks, etc.), J. R. Skeaping (carving), F. P. Morton (ceiling decoration over main staircase), Gordon Russell (tables in directors' room), Heal and Son, Ltd. (carpets), Duncan Miller, Ltd. (curtains), Accordo Blinds, Ltd. (blinds), Daymonds, Ltd. (fascia letters and numerals), Tucker and Edgar, Oswald Hollmann, General Electric Co., Marley Manufacturing Co. (light fittings), Nathan Sales, Ltd., Jackson (auto-claves and sterilizers), Keystone Paint and Varnish Co., Ltd. (paintwork), Stainless Steel Sink Co., Ltd. (stainless steel sinks), South Western Stone Co. (stone), Motors, Ltd. (motors), The Mond Nickel Co., Ltd. (water fittings and Monel sink surrounds).

• • •

House at Cliveden Place.

Architect : **Oliver Hill.**

The general contractors were H. Henning. Among the sub-contractors and craftsmen were the following: Smith Walker & Co. (steelwork), Edward Deane and Beal, Ltd. (central heating), Crittall Manufacturing Co., Ltd. (metal casements), H. Ponton & Co. (electrical installation), Priston and Sons (decorative painting), Stic B. Paint Sales, Ltd. (paints), Walter W. Jenkins & Co., Ltd. (marblework, Portland stonework, pavings, etc.), Flexwood Products, Ltd. (purple palissandre and aromatic cedarwood veneers), London Sand Blast Decorative Glass Works, Ltd. (plate glass panels and shelving), Comyn Ching & Co., Ltd., Joseph Kaye and Sons (ironmongery), Shanks & Co., Ltd. (sanitary fittings), Aga Heat, Ltd. (cooker), Kandya, Ltd. (kitchen fitments), George Johnson & Co. (dinner lift), Skellorn Edwards & Co. (upholstery), D. Bianco and Sons, B. Cohen and Sons, Ltd., Fortnum and Mason, Ltd., Heal and Son., Ltd., (furnishing), Wendelight, Ltd. (special lighting), Paul Guieu, Beetive Electrical Co. (electric light fittings), Edinburgh Weavers, Ltd. (fabrics).

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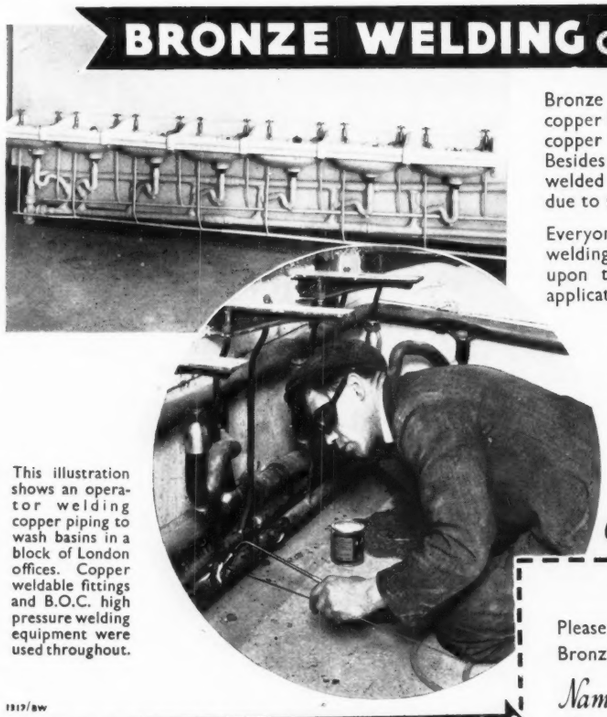

This illustration shows an operator welding copper piping to wash basins in a block of London offices. Copper weldable fittings and B.O.C. high pressure welding equipment were used throughout.

Bronze welding is the most efficient method of jointing copper hot or cold water services. The use of weldable copper fittings is a further advantage in many instances. Besides giving strength equal to the pipe itself, the welded all-copper pipe obviates the danger of bursts due to unequal expansion in the event of freezing.

Everyone concerned with the development of bronze welding should obtain a copy of W. L. Kilburn's book upon the subject. Attached is an order form, and applications will be dealt with by return.

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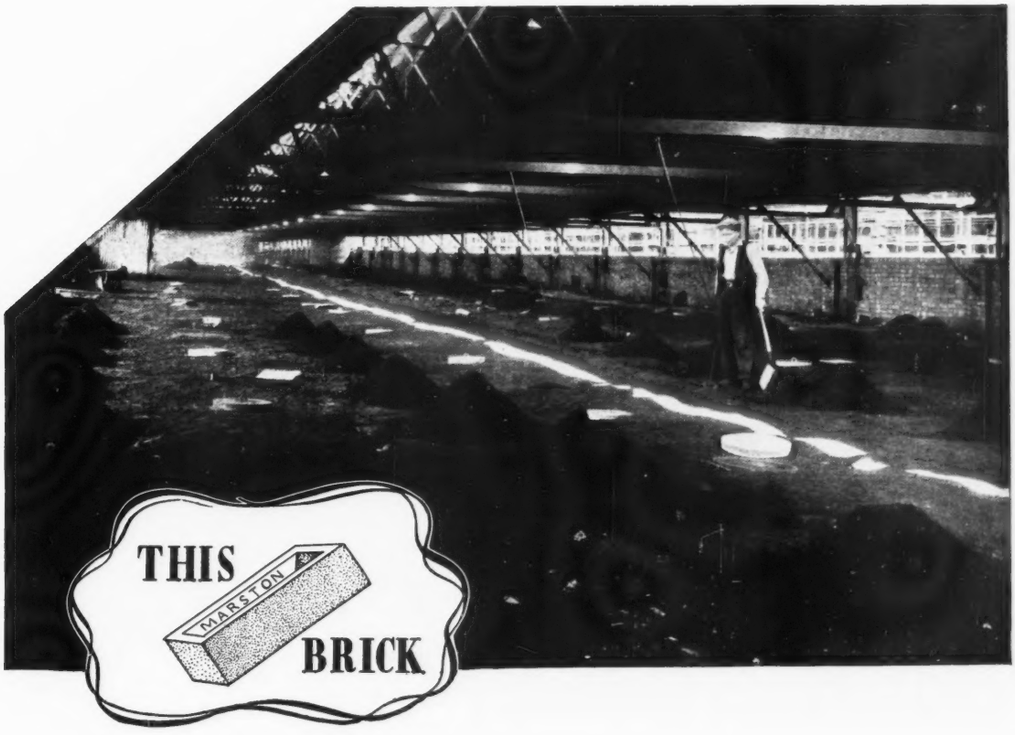

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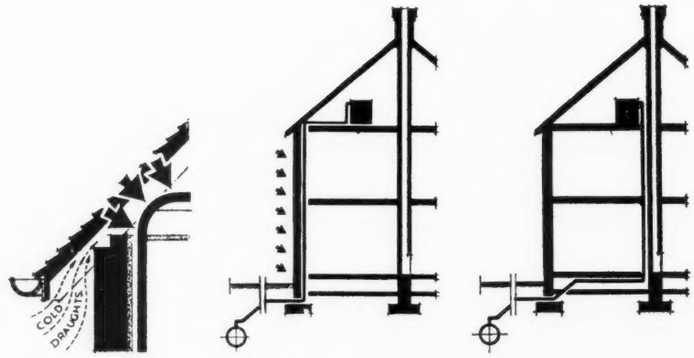
Trade News and Reviews

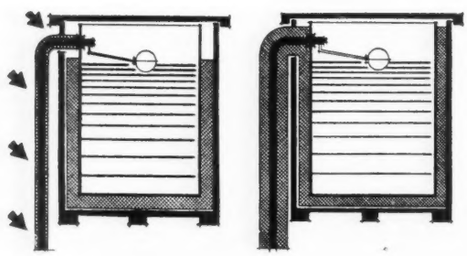


Diagrams from a recently published booklet that have a topical note. They show the wrong way to plan your plumbing layout — running the pipes where they are liable to freeze-up—and a suggested improvement. The first diagram shows the most vulnerable part of the house, from the plumbing point of view. The second and third show, respectively, a usual and an improved pipe-run from the main cistern.

By
BRIAN GRANT

HAVING helped myself to an unusually large portion of Christmas-cum-New-Year vacation I find, on my belated return to the office, that everybody has been so busy doing something-or-other that nobody has been able to take a watchful interest in the mail-bag and extract and preserve for me such tit-bits that might usefully have served as subject matter for these notes. My partner assures me that nothing but calendars, diaries and desk appointment-pads have been pushed through the letter-box for the past three weeks. We certainly have a large collection of the former and, forgive me if I seem ungrateful, what an ill-looking assortment they are. A calendar is a useful piece of stationery; it should also be decorative or, at least, reasonably quiet and inoffensive to look upon. It can hardly fulfil the latter function if it has been designed as a bit of riotous and unmitigated propaganda. There's a time and a place . . .

The avowed object of these notes is to place on record month by month "trade" items of architectural consequence; news of new materials and building products; developments in building and engineering technique; reports on useful investigations carried out by such bodies as the Building Research Station, the Timber Development Association, the Lead Industries Development Council and any other such organizations that exist within the building industry. Good photographs of well-designed objects, such as light fittings, fabrics and furniture, are always received with a welcome, and as many of these as possible will be used as illustrations in these pages of the REVIEW. Interesting examples of craftsmanship in metal, wood, glass; new electrical gadgets for the home, equipment for the office, for the school, for the hospital—all information relating to such subjects will receive most interested consideration and I shall be grateful to those architects, technicians, craftsmen and manufacturers who will take the trouble to send it along. Please address it to me c/o THE ARCHITECTURAL REVIEW.



Alternative plumbing methods in considering the question of freezing-up. The two diagrams on the left, and those at the head of the page, are from a Lead Industries Development Council Publication.

•

Jack Frost and Joe the Plumber

Our Christmas-card-Christmas, delightful as it was to look upon and providing, as it did, every opportunity for the right sort of Yule-tide revelry, created havoc among the pipes. Frozen cisterns, burst pipes and the consequent queues of harassed householders waiting on the local plumber emphasized once again the inadequacy of British plumbing methods.

My Lord of Dorchester in a letter to the *Telegraph* declares most emphatically, and quite reasonably, that "there is absolutely no excuse for frozen pipes in the properly designed modern house." He does not know, he says, "what educational authority is responsible for the training of young architects," and he suggests that "the syllabus should include a course on the correct installation of pipes, cisterns and tanks and their protection against frost." His Lordship does seem to infer that architects must be blamed for the success of Mr. Jack Frost's malicious intrigues.

Watford Gas Co.'s New Showrooms *Architects : Messrs. Dawe & Carter*

CREATION WITH CRAFTSMANSHIP

One hundred and forty-seven years ago, gas made from the destructive distillation of coal was first used for illuminating purposes. To-day, the brightly-lighted, well-planned showrooms and convincing window displays of modern Gas Companies' premises testify to the efficiency of this product as both a fuel and an illuminant.

A vital connection between the showmanship of the window and the personal service of an attentive selling staff is an inviting (and, shall we say moderately imposing ?) entrance. In the example here illustrated, Courtney Pope have contributed to this effect by their high-quality craftsmanship on the three inner doors and fanlights, executed by C. P. metalworkers in silver-bronze.

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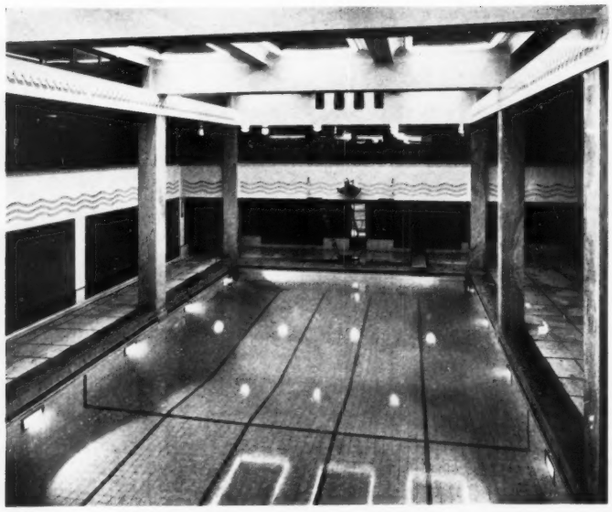

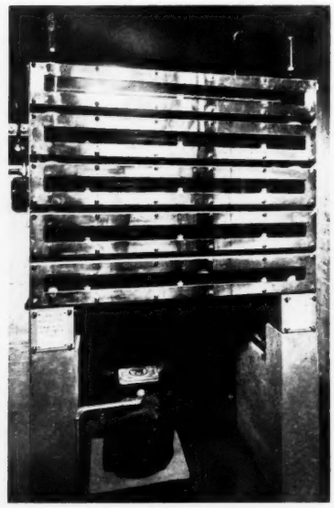

The swimming pool at Dolphin Square. The main illumination is from special **G.E.C.** *underwater lighting units. Sterilization of the pool is effected by means of a new system of ozonizing. On the right is shown the unit installed—a* **P.M.** *ozone-producing plant.*

There were many replies to Lord Dorchester, including one from Eric L. Bird, Public Relations Officer to the R.I.B.A., in which, on behalf of the profession, he indignantly denies the imputation.

Mr. Bird thinks that "the real cause is public apathy" and that "architects and the more reputable speculative builders are powerless in the hands of a building public which puts appearance before worth."

•

I was sorry that he adopted this line of defence. If there is public apathy towards architecture—who must accept the blame for that? If the man in the street has but the vaguest conception of the function of an architect—whose fault is it that such ignorance does exist?

•

I do not think it is an overstatement to say that something like 70 per cent. of the housing work in this country is carried out without the services of the professional architect and the specification, if any, seldom runs to such elementary precautions as protecting service pipes unless insisted upon by a far-seeing purchaser. It is in property of this class that Jack Frost creates the greatest havoc. Should one expect the average house-seeker to understand the intricacies of good plumbing? Is it surprising that the "things that catch the eye"—the well-equipped kitchen, the alluring bathroom and the sundry decorative features—so eloquently appraised by the house-salesman, are the things that captivate the prospective purchaser? Of course it is not.

Surely it is not unreasonable to suggest that the blame for such difficulties in building practice rests primarily with the legislators of building by-laws whose responsibility it is to safeguard the public against inferior building practice; secondly, the builders and plumbers who should know what is and what is not good plumbing practice; and lastly, the R.I.B.A. who should be constantly and actively browbeating the afore-mentioned legislators into a proper realization of their duties.

•

Having said all of which I would commend for everybody's attention a most useful little technical publication issued by the Lead Industries Development Council in which they explain how the protection of water pipes against damage by frost can be largely eliminated by simple routine precautions. In this booklet the recommended precautions are fully set out in a short and practical form, and a series of splendidly simple diagrams illustrate the "wrongs" and the "rights" in plumbing practice. A few of the diagrams accompany these notes.

You may well accuse me of shutting the stable door long after the wretched horse has escaped—but the weather prophets have been busily forecasting a return of extreme cold, and in any case there are many more winters ahead of most of us.

Get a copy from the Technical Information Bureau of Lead Industries Development Council, 19, Hobart Place, Eaton Square, S.W.1.

The Swimming-pool, Dolphin Square

I was taken recently for a tour of inspection round England's (and Europe's) largest block of flats—Dolphin Square, completed in the early months of 1938 and erected on the vast site of the old Army Clothing Depot, Westminster. It is built to house 3,000 inhabitants. And I am advised that already 94 per cent. of the flats have been let.

•

On the day of our visit the weather was viciously cold, and when we were conducted to the swimming pool we were quite anticipating a scene of damp desolation. On the contrary, however, the place was quite alive with bathers. It is an extremely pleasant pool—the accompanying photograph does not do justice to it.

•

The sterilization of the pool has been effected by a comparatively new system of ozonizing. Through perforations in the tiled floor of the pool ozonized air is continuously discharged upwards through the water thus effecting aeration as well as sterilization. According to the resident engineer, periodical tests have shown that the water maintains a standard of purity equal to that required for drinking purposes.

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Wembley Stadium, showing the floodlighting of the ice hockey rink. The equipment comprises 27 1,500-watt gas-filled lamps and 18 400-watt mercury-discharge lamps providing an average illumination of 25 foot-candles over the whole of the rink surface. The Metropolitan - Vickers Electrical Company Ltd., designed and installed the lighting.

One advantage claimed for ozone as against other forms of chemical sterilization is the fact that it does not create a strong or unpleasant odour, and this has made possible the provision of two restaurant bars on the balcony surrounding the pool, carried out by the P.M. Engineering Company of Victoria Street, S.W.1.

OBITUARY

We regret to record the death of Mr. Edmond J. Hill, the senior director of Messrs. Higgs and Hill, Ltd.

Although he had been rather less active in recent years owing to indifferent health, his death during the Christmas holiday, at Wengen, came as shock to many of us. He was sixty-nine.

Mr. Hill was a Fellow of the Institute of Builders and one of the earliest members of the London Rotary Club. He rendered valuable service to the building industry and its charities during his terms of office as President of the L.M.B.A., the Builders' Benevolent Institution, and the Builders' Clerks' Benevolent Institution.

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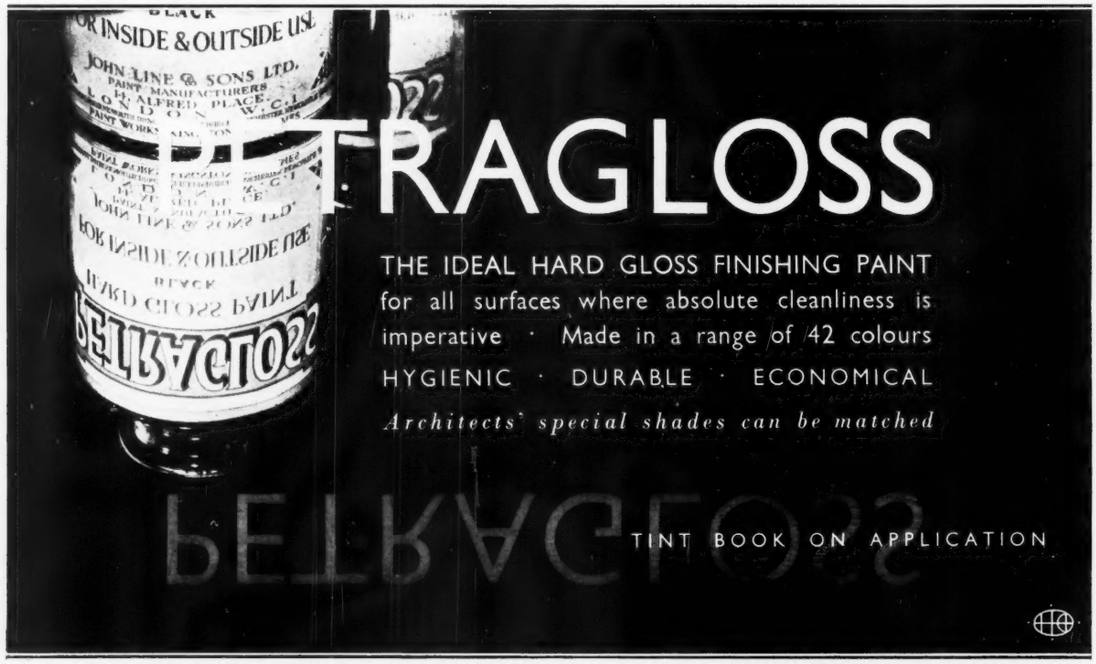
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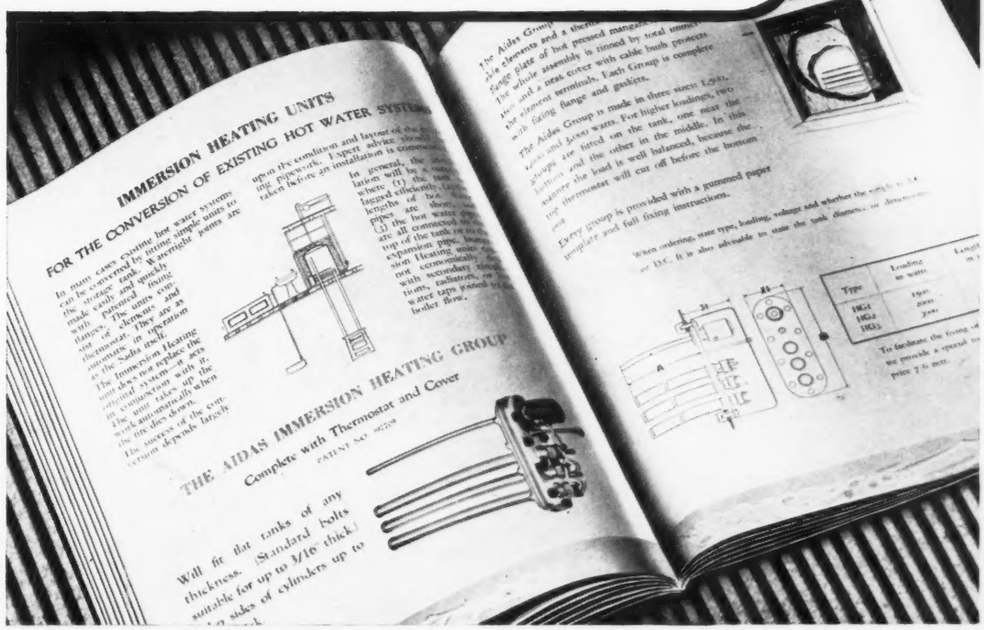
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The Buildings Illustrated

House near Halland, Sussex.

Architect: **Serge Chermayeff.**

The general contractors were Holland & Hannen and Cubitts Ltd. Among the sub-contractors and craftsmen were the following: Bective Electrical Co. Ltd. (electrical installation), Comyn Ching & Co. Ltd. (central heating), John Mullins and Sons (well bore), Thomas and Son (Worcester) Ltd. (windmill pump), Paterson Engineering Co. Ltd. (water purification plant), Tuke and Bell Ltd. (sewage plant), Cerac Ltd. (automatic stoking boiler), J. D. Beardmore & Co. Ltd. (ironmongery and general metalwork: sliding window gear), British Ogro Ltd. (door furniture), Silent Gliding Doors Ltd. (sliding door gear), E. P. Barrus Ltd. (garage door gear), Wellinlith Ltd. (thermal insulation and plaster base), Copper Development Association (copper piping), Shanks & Co. Ltd., Leeds Fireclay Co. Ltd. (sanitary fittings), Walker Crosweller & Co. Ltd. (thermostatic shower mixer), A. Johnson & Co. Ltd., Henry Wiggin & Co. Ltd. (stainless sinks and mixer fittings), British Vitrolite Co. Ltd. (Vitrolite basin top), Troughton and Young Ltd., Merchant Adventurers of London Ltd., Curtis Lighting Co. of Gt. Britain Ltd. (light fittings), MacAndrews and Forbes Ltd (waterproofing), London Brick Company (bricks) Liverpool Artificial Stone Co. Ltd. (copings), Noelite Ltd. (terrace paving), Carter & Co. (London) Ltd. (tiling), Fram Reinforced Concrete Co. Ltd. (cork pavings), Cork Insulation Co. Ltd. (cork stair treads), Brown & Tawse Ltd. (roofing), Konkerwind Ltd. (chimney cap), Vibro-Insulations Ltd. (acoustic blanket), Tentest Fibre Board Co. Ltd. (acoustic tile), D. W. Price & Co. Ltd. (glazing and mirrors), J. Starkie Gardner Ltd. (swinging mirror), British Trane Co. Ltd. (metal vent grilles), Ace Laminated Products Ltd. (standard flush doors), Nobel Chemical Finishes Ltd. (paints), James Latham Ltd. (veneers), Ronco Ltd. (steel bookshelving), E. K. Cole Ltd. (radio installation), Dartington Hall (fabrics), E. Harding Ltd. (curtain makers), J. Avery & Co. Ltd. (venetian blinds), Aga Heat Ltd. (cooker), Linterns Ltd. (plate racks), Messrs. Harrison, (curtain track), Charles Moody, Ltd. (fitment sliding door), Builders' Copper Tube Co. Ltd. (copper piping), British Columbia Commissioner (British Columbian pine, Western red cedar).

• • •

Hospital at Haifa, Palestine.

Architect: **Erich Mendelsohn.**

Among the sub-contractors and suppliers were the following: Lenscrete Ltd. (glass bricks), Pilkington Bros. Ltd. (non-actinic glass domes), Shepherd Tobias & Co. Ltd. (glass), Indestructible Paint Co. Ltd. (paint), Aveling Barford Ltd., Aga Heat Ltd. (kitchen equipment), General Radiological Ltd. (x-ray equipment), Manlove Alliott & Co. Ltd. (sterilizing equipment), General Electric Co. Ltd. (telephone equipment).

• • •

Westminster Central Depot.

Architect: **G. Grey Wornum.**

The general contractors were W. and C. French Ltd. Among the sub-contractors and craftsmen were the following: Le Grand Sutcliff and Gell Ltd. (boreholes), H. Sabey & Co. (demolition), Franki Piling Co. Ltd. (reinforced concrete piles), W. and T. Avery Ltd. (weighbridges), Constructors Ltd. (steel clothing lockers), Taylor Pearse & Co. Ltd. (locks and door furniture), Clark Hunt & Co. Ltd. (iron staircases, wrought iron road gates and steel sheeting), Dorman Long & Co. Ltd. (steelwork, welded, using quasi-arc-electrodes), J. H. Nicholson & Co. Ltd. (heating and hot water installation, extract fans to drying rooms and painting bays), Pinching & Walton Ltd. (electrical installation), Benjamin Electric Ltd., Ascog Ltd. (light fittings), Foster Engineering Co. Ltd. (electrical switchgear), Gent & Co. Ltd. (electric clocks), J. W. Gray and Son Ltd. (lightning conductors), Waygood-Otis Ltd. Dover Engineering Works Ltd. (electric goods lift), Stothert and Pitt Ltd. (electric capstan), Paterson Hughes & Co. Ltd. (electric salt conveyors) B. and

STERILIZING EQUIPMENT

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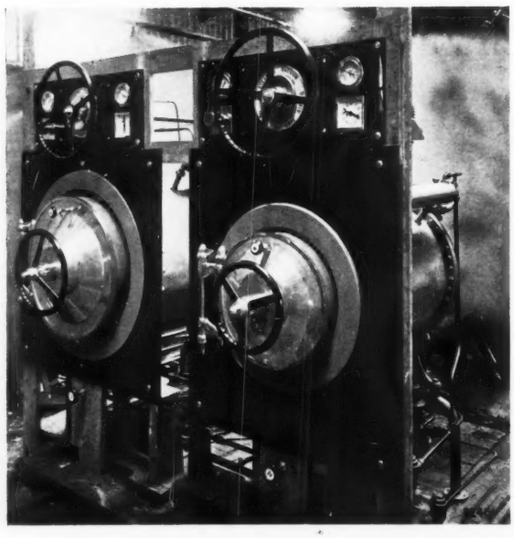
NEW GOVERNMENT HOSPITAL, HAIFA, PALESTINE.

Architect:—Erich Mendelsohn.

——— Fig. 8246 ———



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• • •

House at Chiswick.

Architects: **Michael Dugdale and Fritz Ruhemann.**

The general contractors were S. Wimborne & Co. Ltd. Among the sub-contractors and craftsmen were the following: F. Boultwood and Son (demolition), W. T. Lamb and Son Ltd. (bricks), Cooper Wettern & Co. Ltd. (artificial stone copings, etc.), Liverpool Artificial Stone Co. Ltd. (artificial stone pavings), Everseal Products Ltd. (special roofings), Gliksten Doors Ltd. (doors), James Clark and Son Ltd., Shepherd Tobias & Co. Ltd. (glass), Cashmore Art Workers (cast lead, grates, gates), B. Holden & Co. (linoleum), Broford Ltd. (carpets and felt), Chemical Building Products Ltd. (waterproofing materials), W. H. Gascoigne & Co. Ltd. (central heating, plumbing, boilers), R. and A. Main Ltd. (cooker), Gas Light and Coke Co. Ltd. (gas fixtures, gasfitting), A. H. Cornwall Ltd. (electric wiring), New Light Fittings Ltd., Maple & Co. Ltd. (electric light fixtures), Vent-Axia Ltd. (ventilation fittings), John Bolding and Sons Ltd., W. N. Froy and Sons Ltd. (sanitary fittings), Yannedis & Co. Ltd. (door furniture, window furniture), Ideal Window Co. Ltd. (casements), A. E. Lindsey and Son Ltd. (casements and sliding folding windows), E. Hill Aldam & Co. Ltd. (sliding folding partition), Artistic Blind Co. Ltd. (sunblinds), Cashmore Art Workers, A. H. Huttenbach (metalwork), D. Burkle and Sons Ltd. (built-in cupboards, etc.), A. G. Rankin (folding beds), Art Marbles, Stone and Mosaic Co. Ltd. (marble), Lockley (Tiles) Ltd., Decorstone Ltd. (tiling), Scottish Textile Weavers Ltd., Turnbull and Stockdale Ltd., Donald Bros. Ltd., J. Smithson (textiles), Arthur Sanderson and Sons Ltd. (pearl wallpapers), P. Ostersetzer (special furniture), Goodearl Bros., Cox and Pinney (furniture), Easiwork Ltd. (kitchen furniture), J. Cheal and Son Ltd. (garden work generally), Brodwell Engineering Co. Ltd. (pump), Wellinlith Ltd. ("Wellinlith" slabs).

• • •

Manchester (Ringway) Air Port.

Architect: **G. Noel Hill.** *Consulting Architect:* **Graham Dawbarn.**

The general contractors were C. H. Godfrey and Son Ltd. Among the sub-contractors and craftsmen were the following: John Turton and Son, Ltd. (plumber and glazier), Adamsez Ltd. (sanitary fittings), F. and J. Pilling (Bros.) Ltd. (plasterer and painter), Manchester Slate Co. Ltd. (slater), Bolton and Hayes Ltd. (concretor), British Reinforced Concrete Engineering Co. Ltd. (mesh reinforcement), Banister, Walton & Co. Ltd. (steelwork), Albert E. Sudlow & Co. Ltd. (electrical installation),

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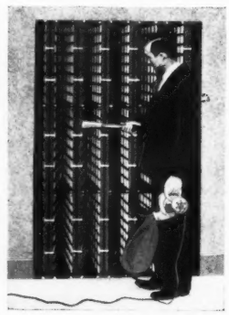

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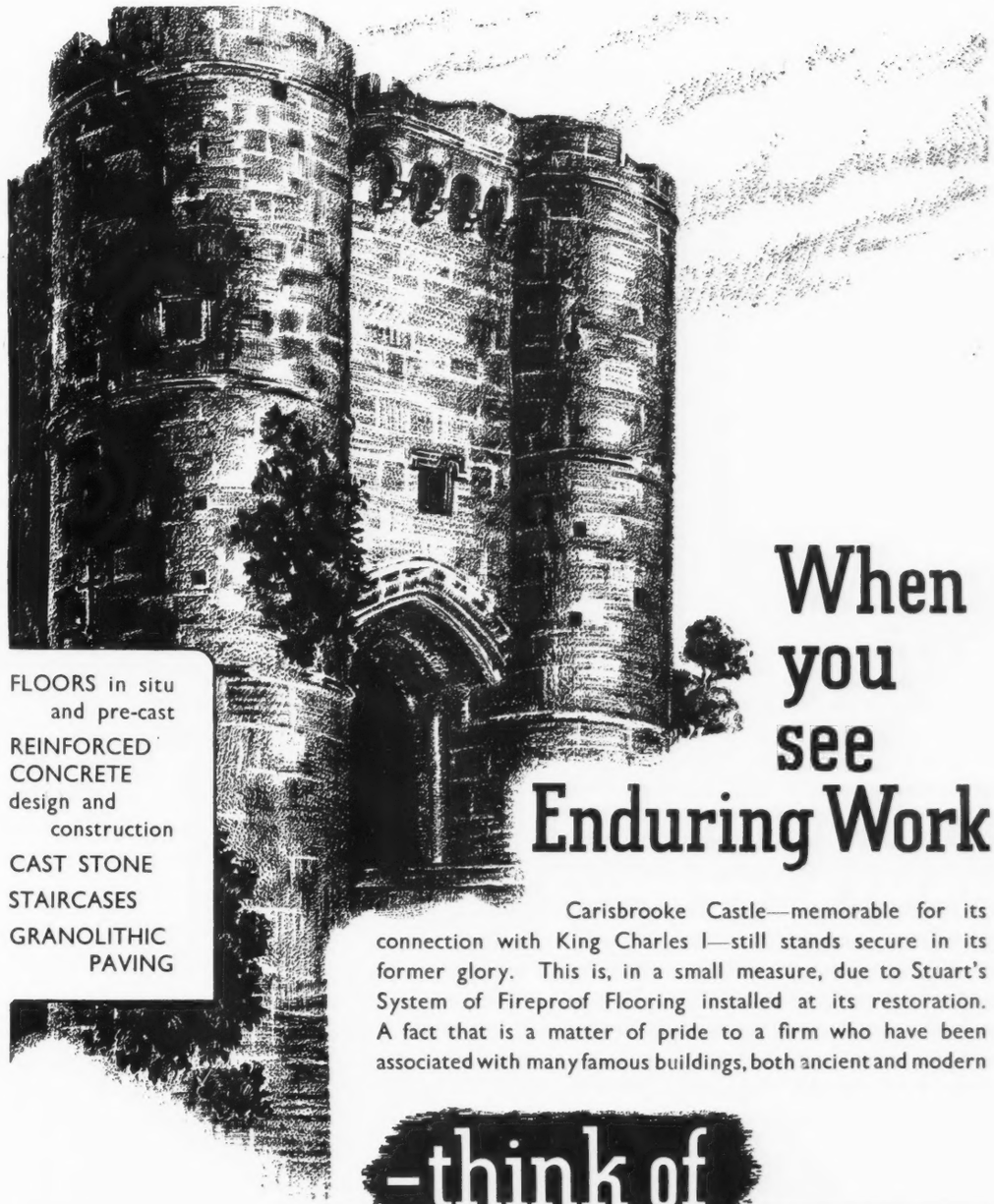

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• • •

Flats at Brixton.

Architect : **Edward Armstrong.**

The general contractors were C. Miskin and Sons Ltd. Among the subcontractors and craftsmen were the following : Frazzi Ltd. (Paropa roofing), Crittall Manufacturing Co. Ltd. (metal windows), Joseph Sankey and Sons Ltd. (metal door frames), Joseph Ebner Ltd. (wood block flooring), Cornes and Haighton Ltd. (hot water installation), F. H. Wheeler & Co. Ltd. (electrical installation), Freeman Heating Co. Ltd. (heating installation), South Metropolitan Gas Co. Ltd. (gas services, gas coppers and gas fires), Austin Veneer Co. Ltd. (doors), John Bolding and Sons Ltd. (sanitary fittings), O'Brien Thomas Ltd. (fireplace surrounds), Nettlefold & Sons Ltd. (ironmongery), Allen & Greaves Ltd. (balcony railings), Pilkington Bros. Ltd. (dome lights), Nautilus Gas Fire Co. Ltd. (flue blocks), Ragusa Asphalte Paving Co. Ltd. (asphalt), Co-Plastering (East) Ltd. (plastering), Matthew Hall & Co. Ltd. (plumbing and rainwater heads), Stuart's Granolithic Co. Ltd. (pre-cast concrete stairs and vents), Nobel Chemical Finishes Ltd. (paints), Carter & Co. Ltd. (glazed tile cills, etc.) Moler Products Ltd (" Fosalsil " flue bricks and insulating partition blocks).

• • •

Berkeley Square House.

Associated Architects : **Gordon Jeeves and Hector Hamilton.**

The general contractors were Sir Robert McAlpine and Sons (London) Ltd. Among the sub-contractors and craftsmen were the following : Ragusa Asphalte Paving Co. Ltd. (asphalt), Acrow (Engineers), Ltd. (shutter props and column clamps), Bath and Portland Stone Firms Ltd. (Portland stone), Waygood-Otis Ltd. (lifts), Williams and Williams Ltd. (steel windows) Brick Makers and Factors Ltd. (facing bricks), Le Grand Sutcliff and Gell Ltd. (artesian wells), Wm. Boyer and Sons Ltd. (sand and ballast), Matthew Hall & Co. Ltd. (heating and sanitation), Beetive Electrical Co. Ltd. (electric lighting and power installation), London Brick Co. Ltd. (hollow floor blocks), Atlas Sprinkler Co. Ltd. (sprinkler installation), Kew Transport (Contractors Supply) Co. (haulage), Matthews & Yates Ltd. (air conditioning), Roberts Adlard & Co. Ltd. (fletton bricks), W. N. Froy & Sons Ltd. (sanitary fittings and ironmongery), Abbey Building Supplies Ltd. (anchorages to concrete), J. W. Gray & Son Ltd. (lightning conductors), Hunziker (Gt. Britain) Ltd. (white flint bricks), Ernest Hawkins Ltd. (plastering), North British Rubber Co. Ltd. (rubber handrails), Haskins (bronze metal doors), Carter & Aynsley Ltd. (bronze metal grilles and door furniture) Fenning & Co. Ltd. (granite and marble), Samuel Elliott & Sons (Reading) Ltd. (lift car doors, doors, joinery), Charles Walker & Co. (quarry tiling), D. Burkle & Sons Ltd. (teak and walnut doors), Diespeker & Co. Ltd. (terrazzo), J. Clark & Son Ltd. (glazing), Ramsdens (London) Ltd. (wall and floor tiling, terrazzo), Bolton Gate Co. Ltd. (collapsible gates), Caston & Co. Ltd. (goods lift doors), Cement Marketing Co. Ltd. (cement), John Healey (London) Ltd. (ferro-concrete glazing), H. H. Martyn & Co. Ltd. (metal dado rails), John Stubbs (Marble and Quarzite) Ltd. (marble to lift halls), Francis Theakston (1933) Ltd. (steel turntables), E. G. Payne Ltd. (fibrous plaster), Maple & Co. Ltd. (linoleum), Redferns Rubber Works Ltd. (rubber), Ideal Boilers and Radiators Ltd. (Rayrad radiators and sanitary ware), I. C. I. (Plastics) Ltd (Perspex synthetic resin sheet), Plastilume Products Ltd. (moulded and machined I. C. I. plastics to lay light in vestibule), Bull Motors Ltd. (Bull super silent motors).

LOUGHBOROUGH PARK
REVIEWED IN THIS ISSUE
Architect : Edward Armstrong, F.R.I.B.A.

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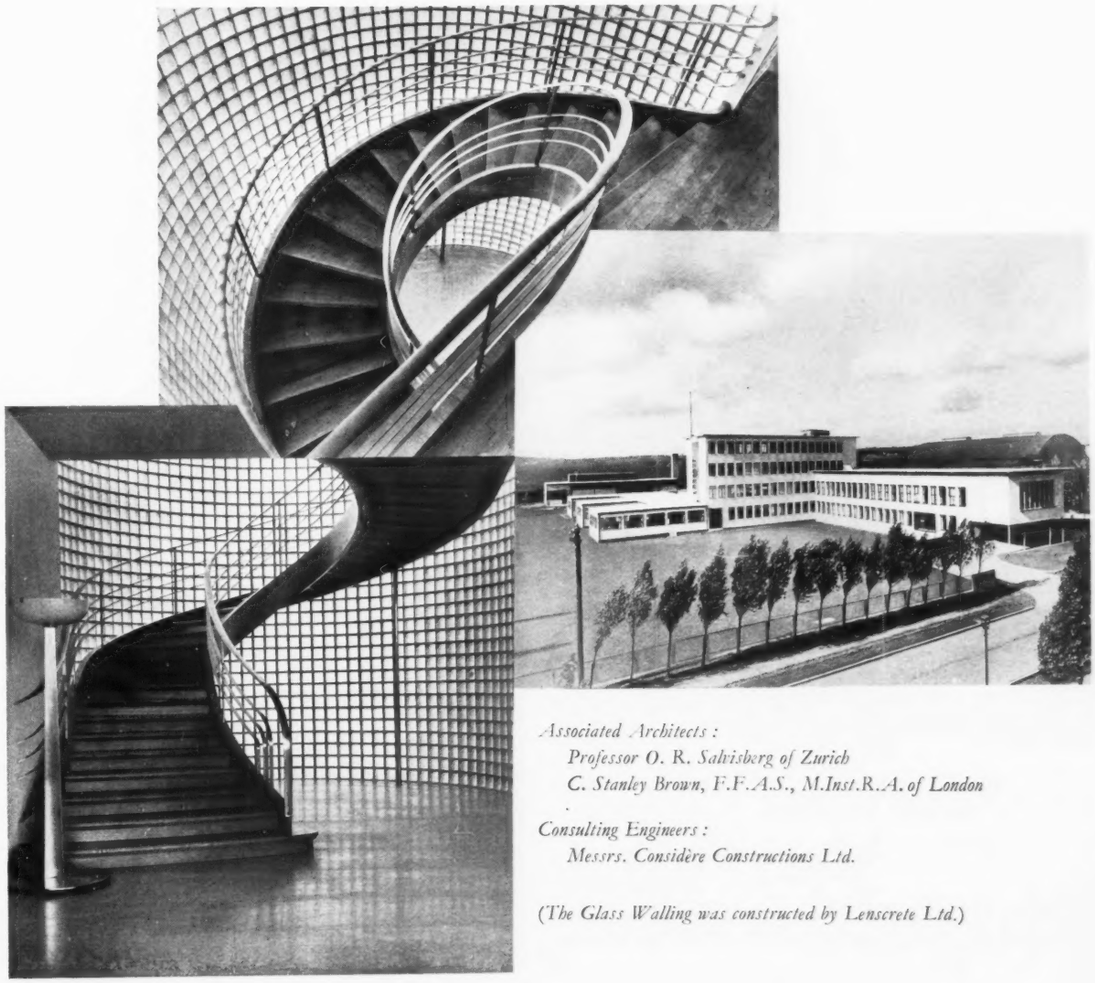

Associated Architects :
Professor O. R. Salvisberg of Zurich
C. Stanley Brown, F.F.A.S., M.Inst.R.A. of London

Consulting Engineers :
Messrs. Considère Constructions Ltd.

(The Glass Walling was constructed by Lenscrete Ltd.)

The illustrations show a general view of the factory ; and two details, at ground and first floor level, of the oak spiral staircase and glass brick walling.

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Trade News and Reviews

Right, part of the Burma Teak exhibit at the Building Centre. Designer, W. Duvall Goodwin. Below, figured teak panel at Radiant House, Liverpool. Quiggin and Gee, architects.

By
BRIAN GRANT

Concerning timber

FINDING myself in the vicinity of Bond Street on one of February's most inclement days I took refuge for a while at the Building Centre—the standard of display here improves yearly, and half an hour's perambulation round the various sections is never time wasted.

•

Burma teak (*Tectona grandis*)

In the timber section there is a new exhibit, arranged by the principal shippers of Burma Teak and designed by W. Duvall Goodwin, A.R.I.B.A., telling the story of teak production from forest to contemporary usage. The three revolving photographic drums (see photograph at the head of these notes) take us through the various stages of production—cutting, logging, conversion and shipping—and show us, finally, the principal uses to which teak is put in modern industry. Immediately above the revolving drums are six panoramic models showing a selection of teak uses—at a not too distant date I hope it may be possible to introduce a fresh set of models, as the existing ones are quite pathetically out of date. The floor to the exhibit is in three sections showing strip, wood block and parquet flooring—all, of course, carried out in teak.

•

The uses of teak are mainly utilitarian. Though it is not the hardest, the heaviest or the strongest of the hardwoods it is certainly one of the most reliable and durable timbers available. The largest teak-consuming industry is shipbuilding—it is, I understand, ranked first in Lloyds' list of timbers suitable for shipbuilding—where it is extensively employed for decking and exposed woodwork generally. Wooden railway coaches are generally of teak construction and many that are still in regular service were built 35 and 40 years ago.

In the building industry teak is more extensively used than is generally real-

A POINT OF VIEW BEHIND THIS

Aluminium Balustrade

Architect : C. H. WHITE, A.R.I.B.A., BRISTOL Metal work by GARDINER, SONS & CO. LTD., BRISTOL

THE versatility of aluminium makes a vital contribution to the basic functions of architecture by giving the architect opportunities to create new designs in metal. This balustrade in a building of the Legal & General Assurance Society is an example. It represents but one item in a plan which took full advantage of the functional and decorative merits of aluminium to express modernity, efficiency, stability • NA 2S heavy sections were used for the handrails. NA 2S is particularly recommended for the formation of sharp turns where the material has to be anodised. NA 13SQA was selected for the pillars and side rails where greater strength was required • Please consult our Advisory Service Department. A qualified architect answers all problems concerning the structural or decorative use of aluminium.

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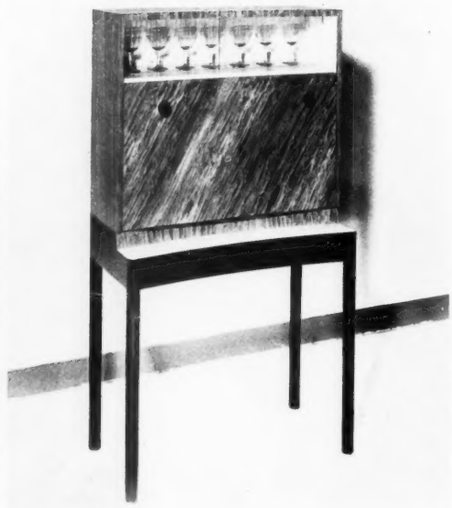

Left, a writing bureau in macassar ebony and walnut, and right, a cocktail cabinet in bubinga and ebony; designed by Gordon Russell for the 1938 Arts and Crafts Exhibition.

Below, a writing desk in English elm, designed and made by the Rowley Gallery.

ized. In appearance it is not a "showy" wood though most attractive panelling can be produced by the use of the relatively scarce "figured" wood. Strong figuring is a feature which occurs in only a small proportion of the trees and the logs from such trees are usually veneered. In the second photograph accompanying these notes we see a good example of figured teak panelling in the board dining-room at Radiant House, Liverpool. Examples of this sort, however, are comparatively few; with the greatly increased use of plywood panelling and the much improved methods of veneer production, such a wide selection of decorative woods, hitherto little used, have become available. Where wear is an important consideration the architect frequently turns to teak, and the fact that it is "fire-resistant" and "acid-resistant" commends its use for many special purposes. Thus we find that the panelling and general woodwork in many of our banks and post offices, and most of our fire stations, is carried out in teak, and that it is almost invariably employed in chemical laboratories. Used externally it does not require a protective coat of paint or varnish. If left untouched it weathers to an attractive silver-grey colour; if it is desired to retain the original colour of the wood then once or twice a year a coat of boiled linseed oil (well rubbed in to remove stickiness) should be applied. It is a splendid timber with which to construct garden furniture and summerhouses, and, in the form of shingles, provides a durable and reliable roof covering.

•

As to timber in general, surely no other building material unless it be marble, can be found with such an amazing variety of colour and effect—that, at least, is the impression one gets from a general survey of the timber section at the Building Centre. The display panels exhibited range in colour from almost pure white, right through every conceivable shade of brown, grey and yellow, to jet black. Some of the more exotic woods need handling with a good deal of care and discrimination. Zebrano, for instance, used for large panelwork, is excessively "showy," even vulgar. Arbele is another strangely decorative wood that should not be allowed to get into the hands of the East End manufacturers of modernistic furniture. Three most attractive, and safe, woods are Indian silver greywood, Indian Laurel and Australian black bean.

It amazed me to find that one manufacturer of flush doors had conceived the weird and wonderful idea of producing one camouflaged to imitate a steel door.

•

The cocktail-cabinet and writing-bureau illustrated on this page were designed by Gordon Russell for the 1938 Arts and Crafts Exhibition. The former is carried out in bubinga, natural colour and grain, with a contrasting base of ebony. The writing bureau is in macassar ebony and walnut; the legs and the drawer handles are covered in pigskin. In contrast to these very elegant showpieces I give you a simple piece of office furniture made and designed, in English elm, by the Rowley Gallery. Note the door in the background—also in elm—which is constructed of full length narrow boards tongued together and with a groove cut where the boards join so as to allow for any possible movement of the timber.

The 'White Knight' electric cooker

Adjoining the timber section at the Building Centre is the Electrical display—more than somewhat overcrowded, I fear, though I cannot offer any practical suggestions as to how this defect might be eliminated if you have just got to get so many electric cookers and heaters and washers and light fittings into a certain restricted area. A very efficient looking electric cooker is that made by Rubery Owen & Company. It is made of pressed steel throughout and finished with a triple coat of cream vitreous enamel—dimensions: overall width 23 ins., depth 24 ins., height 36 ins. to hob, 46 ins. to top of splash plate. Immediately below the hob surface is the drawer-type grill chamber mounted on ball-bearings for ease of opening and closing. The

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Left, a "Coldair" electric refrigerator, one of the G.E.C. range. Right, an electric cooker in pressed steel, manufactured by Rubery Owen.

extreme oven capacity is 1,896 cu. ins., the interior is of stainless steel; the oven temperature is automatically controlled and a pilot light indicates when the required temperature is reached. The cooker is also fitted with fully automatic safety devices. Below the oven a utility drawer is provided for the storage of cooking utensils. Price £23 12*s.* 6*d.* Shipping weight, 1 cwt. 2 qrs. 8 lbs. approximately. Shipping cube, 22 cu. ft. approximately. Manufacturers—Messrs. Rubery Owen & Company Ltd., Britannia Works, Coventry.

●

Two new "Coldair" refrigerators

In these days of kitchenettes it is essential that equipment occupies the least possible amount of space. With this consideration in mind G.E.C. designers have introduced two new "Coldair" refrigerator models—a small 3 cu. ft. model at £27 10*s.* and a 5 cu. ft. model at £48 10*s.* The small model occupies no more floor space than the average 2 to 2½ cu. ft. model, its overall size being 45⅜ ins. high, 21½ ins. wide, and 21 1/16 ins. deep. The appearance of both models is "streamline" and sensible.

●

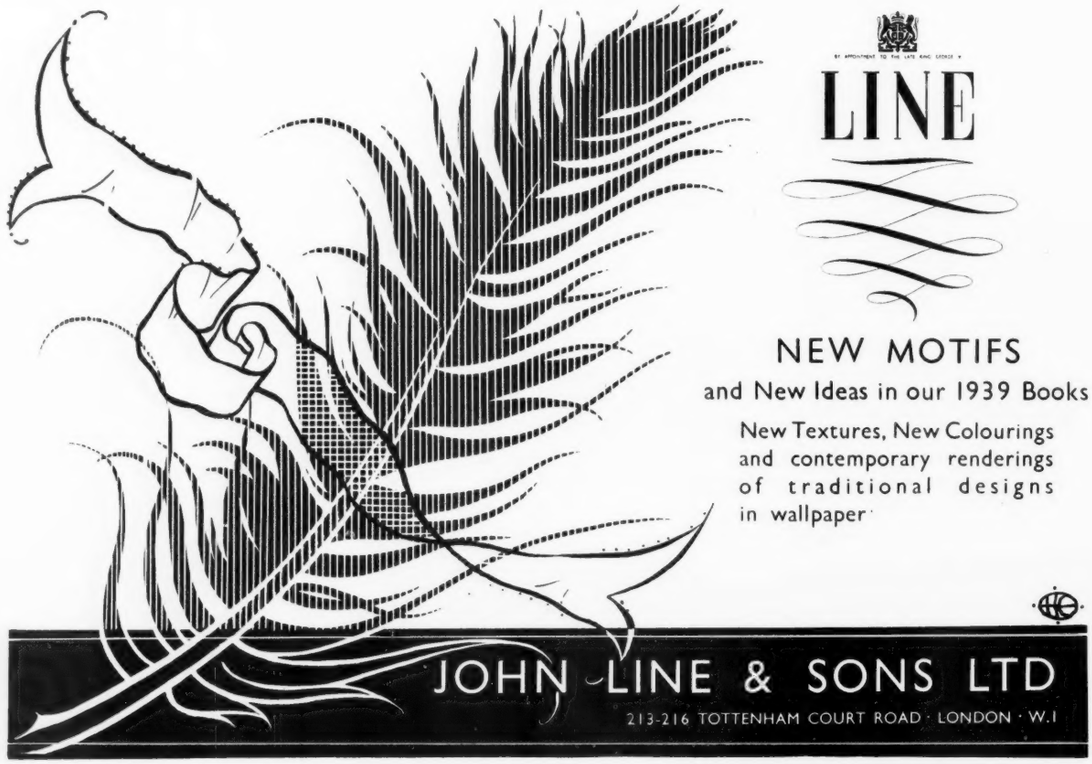
It really does seem that our manufacturers have at long last learned that "Art" in the kitchen does not pay—I mean, of course, "Art" with a capital "A" as opposed to good rational "design."

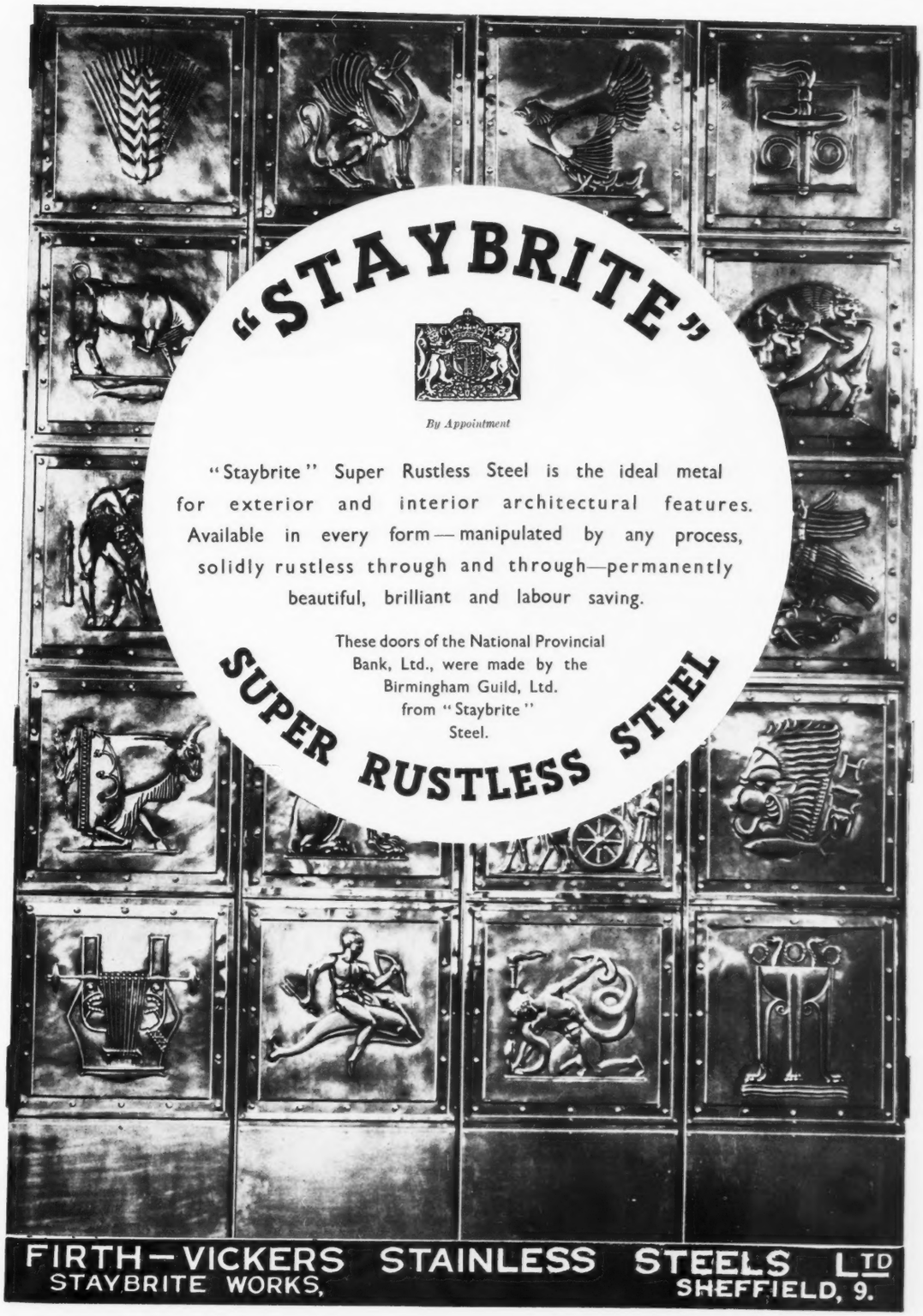
The Buildings Illustrated

House in Newton Road, Paddington.

Architect: **Denys Lasdun.** ***Quantity Surveyor:*** **Cyril Sweett.** ***Consulting Engineers:*** **Felix J. Samuely and Conrad W. Hamaan.**

The general contractors were Leslie Bilsby Ltd. Among the sub-contractors and craftsmen were the following: F. Bradford & Co. Ltd. (reinforced concrete), Matthew Hall & Co., Ltd. (heating, hot water), Mortimer Gall &

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Co. Ltd. (electrical work), Williams and Williams Ltd. (windows), G. Stephenson & Co. Ltd. (cork flooring), Martin Van Straaten & Co. (external tiling), Stic B Paint Sales Ltd. (external painting), Joseph Chater and Sons Ltd. (sanitary fittings), Lift and Engineering Co. Ltd. (service lift), Frazzi Ltd. (Paropa roofing), Shutter Contractors Ltd. (garage roller door), J. D. Beardmore & Co. Ltd. (ironmongery), Joseph Avery & Co. Ltd. (sun blinds), Troughton and Young Ltd. (electrical fittings), Bratt Colbran Ltd. (fireplace interior), James Clark and Son Ltd. (Insulight glass brick panels), James Carter & Co. (garden). Furniture for special photographs lent by Messrs. Isokon, Finmar, Gordon Russell and Leslie Bilsby Ltd.

•

Shop at Nottingham.

Architect : **Duncan Miller.**

The general contractors were Cooke's Ltd., Finsbury. Among the sub-contractors and craftsmen were the following: Gilbert and Hall Ltd. (structural steel), Lenscrete Ltd. (glass), Phœnix Electrical Co. (electric wiring), Troughton and Young Ltd. (electric light fixtures), Unity Heating Ltd. (electric heating), Dryad Metal Works (door furniture), Artistic Blind Co. Ltd. (sunblinds), Express Lift Co. Ltd. (lifts), Claude General Neon (signs).

Shop at Glasgow.

Architect : **Duncan Miller.**

The general contractors were A. Edmonds and Co. Ltd. Among the sub-contractors and craftsmen were the following : A. Rogerson & Co. (reinforced concrete), Lenscrete Ltd. (glass), G. Stephenson and Sons (patent flooring), A. and C. Edelman Ltd. (electric wiring), Troughton and Young Ltd. (electric light fixtures), Unity Heating Ltd. (electric heating), Dryad Metal Works (door furniture), Artistic Blind Co. Ltd. (sunblinds), Cooke's (Finsbury) Ltd. (cupboards, fittings).

•

Shop at Wolverhampton.

Architect : **Duncan Miller.**

The contractors for the whole of the work were Harris and Sheldon Ltd.

•

House at Hinksey Hill, near Oxford.

Architects : **Samuel and Harding.**

The general contractors were Knowles and Son (Oxford) Ltd. Among the sub-contractors and craftsmen were the following : Northwick Brick and Tile Works (bricks), Accrington Brick and Tile Works (fireplace bricks), Fredk. Braby & Co. Ltd. (copper roofing), D. Anderson and Son Ltd. (flat roofing and roofing felt), Horsley Smith & Co., Ltd. (oak flooring), Cellulin Flooring Co. Ltd. (patent flooring), F. G. Alden (central heating), Industrial Domestic Heaters Ltd. (Selectas oil burners), Aga Heat Ltd. (Aga cookers), Carter's Tiles Ltd. (floor tiles), Troughton and Young Ltd., General Electric Co., Oswald Hollmann, Merchant Adventurers of London Ltd. (electric light fixtures), Lowe and Oliver (electric wiring), George Jennings (sanitary fittings), The Shannon Ltd. (filing cabinets), Cork Insulation Co. Ltd. (cork flooring), Nettlefold and Sons Ltd., Evered & Co. Ltd., Dryad Metal Works (door furniture), Metallbau Keller (Basel) (sliding window and door gear), J. W. Gray and Son Ltd. (lightning conductors), Turners Asbestos Cement Co. Ltd. (asbestos cement and rainwater goods), J. H. Grant Ltd. (metal work to stairs), British Plaster Board Ltd. ("Thistle" plaster, white), Webber and Harrison Ltd. (flush doors), Noelite Ltd. (paving), Bratt Colbran Ltd. (fireplaces), Frigidaire Ltd. (refrigerators).

•

House near Henley-on-Thames.

Architects : **Gibb and Low.**

The general contractors were Ernest Callis Ltd. Among the sub-contractors and craftsmen were the following : Oxford Asphalte Co. (asphalt flat roofing), London Brick Co. (bricks), Power's and Deane Ransome's Ltd. (structural steel), Wheatly & Co., Ltd. (quarry tiles), Setchell and Sons Ltd. (slates, unselected

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Our photograph shows one of the many decorated rooms in Waring & Gillow's Showrooms, where fine furniture is displayed in appropriate surroundings. The Settee, copied from a model of the Queen Anne period, is typical of the fine reproduction work for which Waring & Gillow have long been famous. It is covered in silk velvet with an exquisite piece of *petit point* needlework as a back panel. The carved Card Table (with folding top) and the low pedestal are in walnut.

Architects are invited to write for a copy of "Furniture of To-day and To-morrow" (72 pages).

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●

Café in Manchester.

Architects : **Misha Black and Walter Landauer.**

The general contractors were A. Edmonds & Co. Ltd., who were also responsible for demolition and shop fittings. The general craftsmen were Daymonds Ltd., and the artist, Milner Gray. Among the sub-contractors and craftsmen were the following : Redpath Brown & Co. (structural steel), Chance Bros. & Co. Ltd. (glass), Inlaid Ruboleum Tile Co., Ltd. (patent flooring), Mortimer Gall & Co. Ltd. (electric wiring, electric light fixtures, signs), Ekco Ltd. (Thermovent electric heating), Bradshaw Fan and Ventilation Co. Ltd. (ventilation), George Clegg and Son (plumbing), Taylor Pearse & Co. (door furniture), R. Guy (decorative plaster), E. Hawkins (Liverpool) (furniture), Express Lift Co. Ltd. (lifts).

●

Co-Operative Wholesale Warehouse, Manchester.

Architect : **W. A. Johnson.** *Assistant :* **J. W. Cropper.**

The general contractors were the Co-Operative Wholesale Society Ltd. Among the sub-contractors and craftsmen were the following : Limmer and Trinidad Lake Asphalte Co. Ltd. (asphalt), Banister Walton and Co. (structural steel), Pilkington Bros. (glass), J. A. King and Co. Ltd. (patent glazing), Doultons Ltd. (sanitary fittings), W. and R. Leggott Ltd. (door furniture), Crittall Manufacturing Co. Ltd. (casements), Haskins Ltd. (rolling shutters), Safety Tread Syndicate Ltd. (iron staircases), Constone Ltd. (artificial stone, stonework), Conway Grate and Tile Co. Ltd. (tiling), Manchester Corporation Water Mains (water supply), S. Newton and Co. Ltd. (signs).

●

School at Sidcup.

Architect : **W. H. Robinson.**

The general contractors were H. Friday and Sons, who were also responsible for the joinery and school fittings. Among the sub-contractors and craftsmen were the following : Permanite Ltd. (damp-courses and asphalt), Christiani and Nielsen, Ltd. (reinforced concrete), High Brooms Brick and Tile Co. (facings and bricks), Southern Silica Brick Co. (sand-lime bricks), J. A. King & Co. Ltd. (concrete roof lights), British Plaster Board Ltd. (cork slabs, bituminous roofing and asbestos cement tiles), H. Hope and Sons, Ltd. (roof lights), Vigers Bros. Ltd. (wood-block flooring), St. Helens Cable and Rubber Co. Ltd. (rubber), F. Hayden Ltd. (central heating), Ideal Boilers and Radiators Ltd. (Ideal heating boilers), Lumbys Ltd. (domestic boilers), G. E. Wallis and Sons Ltd. (electric wiring), General Electric Co. Ltd., Best and Lloyd Ltd., Wardle Engineering Co. Ltd., Harcourts Ltd., Tucker and Edgar, D. Assersohn (electric light fixtures), Gummers (shower fittings), Doulton & Co. Ltd., E. E. Farrer Ltd. (sanitary fittings), Dryad Metal works, James Gibbons Ltd., Yannedis & Co. (door furniture), Crittall Manufacturing Co. Ltd. (casements and window furniture), Synchronome Co. (bells and clocks), British Home and Office Telephone Co. Ltd. (telephones), Accordo Blind Co. (dark blinds), J. Salway and Sons Ltd. (metalwork), S. P. Sanders (curtains), Education Supply Association (school fittings), Metropolitan Water Board's Main (water supply), Abbey Building Supplies Co. (dovetail masonry slot and brick anchors).

An example of panelling in coloured Traffolyte at a well-known London store.

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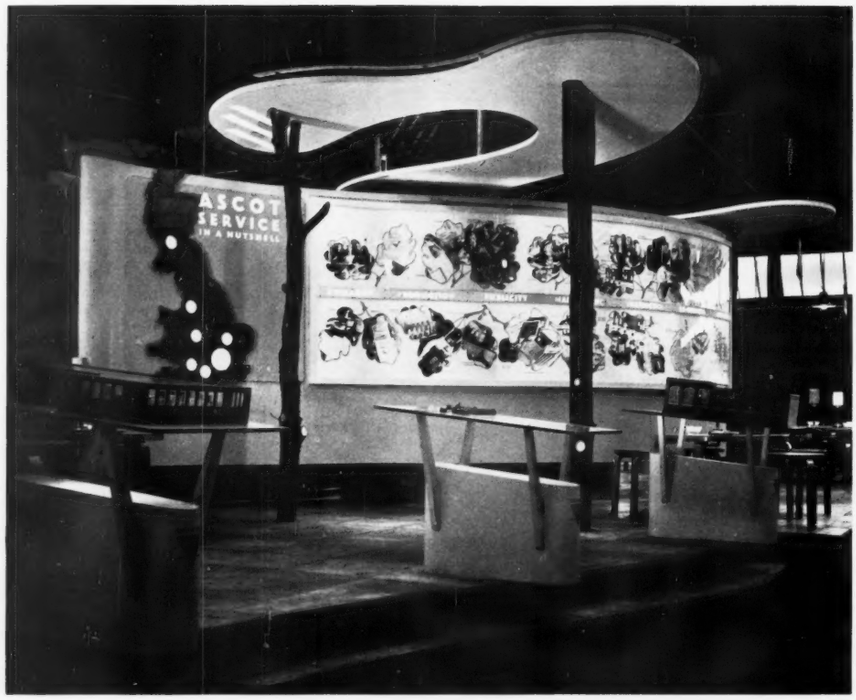

B.I.F. stand, in the Birmingham section, by Rodney Thomas, for Ascot Gas Water Heaters Ltd. Designed as a tea terrace it was one of the most attractive exhibits at Castle Bromwich and is particularly well planned from the circulation point of view.

Trade News and Reviews

By BRIAN GRANT

British Industries Fair

HIGH spot of this year's B.I.F.—the fabric display at Earl's Court. Yes, we must take off our hats to Britain's textile manufacturers; what they had to show us was worth going a long way to see, and their manner of showing it was first class "exhibitionism." Is it too much to hope that other sections of British industry will at future B.I.F.s follow the admirable lead of their textile brethren?

•

For those who were unable to get to Earl's Court—a few words about it all. The textiles section organized, in conjunction with the Department of Overseas Trade, by the British Textiles Exhibition Committee was planned and designed as a single unit. In place, therefore, of the sort of chaotic individualism so generally to be found at trade exhibitions in this country we had orderliness and uniformity. The B.I.F. is commonly referred to as Britain's Shop Window—it is very pleasant to record that this particular section of the Window gave an impression of most exhilarating progress.

The standard of fabric design in this country is exceptionally high. This is a happy thought when one remembers that not so very many years back our leading architects and interior decorators were compelled to make their selection from continental importations.

•

Furniture at the B.I.F.

The greater part of the floor space at

Stand for Messrs. Donald Brothers, at the Earl's Court section of the B.I.F. Designer: Marion Dorn.

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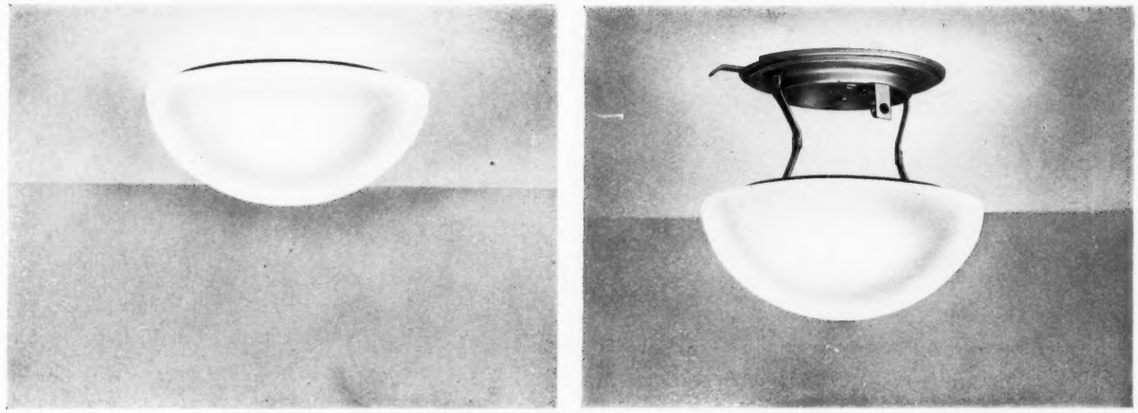

Two views of a lamp fitting design by the Forward Electric Company, which incorporates the attractive appearance of a close-to-ceiling fitting with the easy cleaning and maintenance of a pendant light. By merely moving over a lever, shown on the left in the right-hand illustration, the whole unit is allowed to swing free on a swivel carrier, in which position the glass can be cleaned without removal. The normal, closed, position shown on the left, is obtained quite simply by pushing the glass up and returning the lever to its original position.

Earl's Court was occupied by our furniture manufacturers—and the less said about them the better. What they had to show us, and their manner of showing it, was thoroughly depressing. In contrast to the Textile Section the Furniture Section was utterly bad. Really something should be done about it—the standard of furniture design in this country cannot have sunk to such a low level as this B.I.F. show would make us believe.

•

Let me formulate my criticism constructively. What was wrong with the Furniture Section? Well, in the first place it was, or had every appearance of being, a jumble of unrelated stands massed together without any sort of planned control or supervision. So far as one could judge no regulations or limitations were imposed and each manufacturer having been allotted his particular plot was left entirely to his own devices. And so there were stands of all shapes and sizes and colours. Individually they were nondescript, a few were vulgar, en masse they presented a sorry picture of unplanned mediocrity. And then the furniture itself. Is it essential at a Fair of this sort that the manufacturer should forsake all attempt at artistic and orderly display in order to pack his stand with the greatest possible amount of furniture? On some of the stands tables and chairs and beds and bureaux were literally stacked one on top of the other. Furniture thus displayed, and in so mundane a setting, even though it be good furniture, and well designed (which most of it certainly was not) is executing its sales appeal acts under a very severe handicap. There were one or two exceptions, the most notable, I thought, being stand No. 142, where Messrs. Alpe Brothers of Banbury were content to show a minimum of furniture displayed as a series of rooms.

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Sorry to be so downright, but those responsible should do a lot of thinking before next year's Fair. There were many important absentees from this year's list of exhibitors, manufacturers of considerable reputation whose exhibits would have done much to enliven the interest of our foreign visitors, and one cannot help believing that their unwillingness to participate is due in no small measure to a strong disapproval of the existing arrangements.

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Another light fitting manufactured by the Forward Company, in this case a pendant. It is built up of a 12-inch diameter globe unit, with a 20-inch diameter reflector suspended on it. The reflector, which is sprayed to a white finish on the inside, may be finished to any colour, suiting the general decoration, on the outside.

E.L.M.A. Lighting Conference

Those who attended the fourth and last session of the 1939 E.L.M.A. architects conferences (Lighting Service Bureau, February 22nd) were well entertained. The first speaker, Mr. H. Lingard, manager of the Bureau, opened his remarks by explaining that the primary object of his address was to "provoke discussion"—he provoked, I think, rather more than he had bargained for and was quite a little at sea when called upon to reply to some of the challenging criticism so eloquently put forward by Mr. Serge Chermayeff. The subject being debated

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Gosforth, Newcastle-on-Tyne. Residence.
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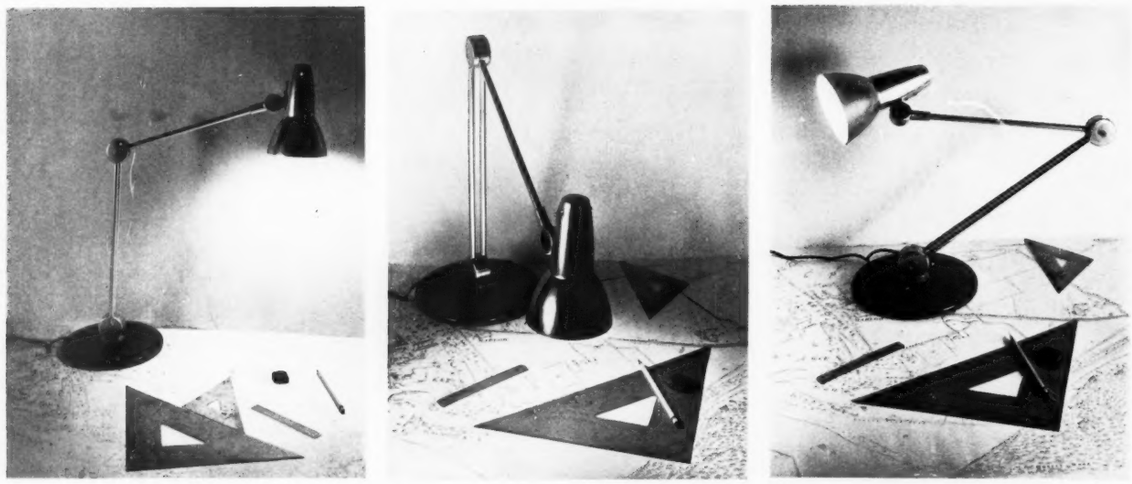

Above are shown three positions of the "Arclight" adjustable lamp, incorporating several points in the design that gives it considerably more efficiency than some of the older types of adjustable lamp. Made in two sizes, one having an extended range diameter of just under five feet, the other of just over six, it is marketed by Messrs. E. N. Mason and Sons.

was "Lighting problems in domestic architecture."

•

One point stressed by most of the speakers was "inadequate wiring facilities." How true it is that even in the architect designed house or flat the facilities provided for a proper and full use of electricity are so often quite foolishly inadequate. In speculatively built houses on good class estates it is uncommon to find more than two lighting points in any of the principal rooms and there are, almost invariably, an inadequate number of power plug-points. In every home today the wiring installation should make efficient provision for radio reception, the principal rooms should have an electric clock point, the kitchen should allow for the possible subsequent intro-

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Is electricity cheap?

Mr. Lingard referred to the "misconception that electric lighting is expensive." Both Mr. Lovatt Gill and Mr. Chermayeff challenged this and maintained that even the average of 2d. mentioned by Mr. Lingard was a high figure if it comprised at one end of the scale such charges as 1/– per unit.

•

On the subject of light fitting design the opinions expressed were far from complimentary and the verdict of the meeting seemed to be that the average electric showroom stock was "horrible and repulsive." In the name of Art we have, indeed, had inflicted upon us some of the strangest electrical atrocities, but there are showrooms and *showrooms*.

•

Only a few days ago I received from the Forward Electric Company, a firm of whom I had not previously heard, a catalogue illustrating a selection of their standard lighting units. I opened it somewhat tremulously expecting to find an array of super-modernistic and pseudo-period extravaganzas and was pleasantly surprised to see a range of simple and efficient looking units designed primarily for the purpose of satisfactory illumination. Two fittings from this catalogue are illustrated on page lxiv. The first is a single light pendant unit comprising a 12 in. diameter glass enclosed unit and a 20 in. diameter reflector; as can be seen from the photograph the illumination from the unit is mainly concentrated downwards but a suitable proportion of the light is diffused upwards on to the ceiling. The second is a flush ceiling fitting; this unit incorporates a principle whereby the movement of a small lever on the metal ceiling plate releases the unit from its closed position allowing it to swing free on a swivel carrier. The normally closed position is obtained by pushing the glass upwards and returning the lever to its original position. The manufacturers are The Forward Electric Company, Ltd., Kingstanding Road, Perry Bar, Birmingham.

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A new adjustable desk lamp

When the drawing equipment people break into office illumination one may reasonably assume that they should know what's what and the sort of lighting efficiency required by the draughtsman. In producing the Arc-light adjustable lamp, E. N. Mason have done something thoroughly worth while. This lamp (see photographs on the previous page) is triple jointed—sufficient to enable a wide ray of controlled light to be thrown in any desired direction, on any object. Two types in four good looking finishes are available—the T 100 series with an extended range diameter of about five feet and the T 200 with a range diameter of just over six feet. Prices are from 45/– to 50/– and the lamps are supplied in various finishes of anodised silver anodised black and chromium. I venture to forecast that this lamp will be a best seller in its particular class. For further particulars write to E. N. Mason & Sons, Ltd., Arclight Works, Colchester or to their London Office at Nos. 8 and 9, Ivy Lane, E.C.4.

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The Buildings Illustrated

Flats at Palace Gate.

Architect: Wells Coates.

The general contractors were E. Pollard & Co. Ltd. Among the sub-contractors and craftsmen were the following: Ruberoid Co. Ltd. (asphalt, special roofings, roofing felt, foamed slag, waterproofing materials), Liverpool Artificial Stone Co. Ltd. (pre-cast art stone external wall slabs), Nicholls and Clarke Ltd.

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Neville House, Westminster — *Architects: Messrs. T. P. Bennett & Son*

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We owe our present calendar to Pope Gregory XIII.

Our thanks are due to William Willett for an extra evening hour of summer daylight.

Time marches on, in spite of juggling with almanac and clock. C. P. craftsmanship stands the test of time in manner and method and material.

In Neville House, Westminster, Courtney Pope were responsible for the whole of the decorative hardwood joinery and panelling, including the entrance hall, six landings on upper floors, and the main entrance doors in walnut, as well as the metal staircase balustrade, with walnut handrailing, a view of which is shown in the illustration above.

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•

House at Hampstead.

Architect : Oliver Hill.

The general contractors were R. Mansell & Co. Ltd. Among the sub-contractors and suppliers were the following: Robert Y. Ames Co. (bricks), Broadmead Products Ltd. (reconstructed stone facings), Ragusa Asphalt Paving Co. (asphalt), Art Pavements and Decorations Ltd. (Biancola window cills), Comyn Ching & Co. Ltd. (central heating), Pulver & Co. (electrical installation), Crittall Manfg. Co. Ltd. (metal casements), Educational Supply Association Ltd. (sliding windows), Pilkington Bros. Ltd. (saucer dome lights, glass wall tiling), D. Anderson and Sons Ltd. (thermotile paving), Duranbrite Flooring Co. (flooring), Runnymede Rubber Co. Ltd. (rubber), Veneercraft Ltd. (doors and panelling), J. A. King & Co. Ltd. (sliding door track), James Gibbons & Co., Ltd. (ironmongery), Marb-L-Cote Ltd. (textured wall surfaces), Stic B. Paint Sales Ltd. (paint), Walter W. Jenkins & Co. Ltd. (marble chimney piece), Shanks & Co. Ltd. (sanitary fittings, sinks), Troughton and Young Ltd. (electric light fittings), Fredk. Sage & Co. Ltd. (display cabinet), Skellorn Edwards & Co. Ltd. (curtains and upholstery), Aga Heat Ltd. (cooker), Parkinson & Co. (kitchen wall tiling), Electrolux Ltd. (water softener), Richardsons Plasterers (external pavings), A. Gavin Jones (garden work and plants).

•

Tourist Bureau, Piccadilly.

Architect : Michael Rachlis.

The general contractors were H. N. Barnes Ltd. Among the sub-contractors and craftsmen were the following : M. and R. Moore (marble work), E. G. Payne Ltd. (plaster work), Wilton Royal Carpet Factory (carpets), Humpherson & Co. Ltd. (plumbing work), Dunlop Rubber Co. (rubber floors), Phœnix Electrical Co. Ltd. (electrical and neon installation), Hans Feibusch (artist, murals), British Aluminium Co. Ltd. (aluminium supplies).

•

Nurses' Home, Lewisham.

Architect : Bertram Carter.

The general contractors were Thomas and Edge Ltd. Among the sub-contractors and craftsmen were the following : Trussed Concrete Steel Co. Ltd. (excavation, foundations, reinforced concrete, solid floors, special roofings, "Solcheck" perforated tiles), Smeed, Deen & Co. Ltd. (bricks), J. H. Sankey and Son Ltd. (Cranham blocks for partitions), Furdecor Ltd. (cork carpet, rubber stairtreads, furniture, textiles), Norris Warming Co. Ltd. ("Rayrad" central heating), Aga Heat Ltd. (Aga cookers), Hobart Mnfg. Co. Ltd. (Hobart washing-up machine), South Metropolitan Gas Co. Ltd. (gas-fitting), Ideal Boilers and Radiators Ltd. (Ideal boilers), Berkeley Electrical Engineering Co. Ltd. (electric wiring, bells), Matthew Hall & Co. Ltd. (plumbing), Teuton & Co. Ltd. (sanitary fittings), Yannedis & Co. Ltd. (door furniture), Williams and Williams Ltd. (casements and window furniture), Marquees Ltd. (sunblinds), Gypsum Mines Ltd. ("Sirapite" plaster), Conrad Parlanti Ltd. (metalwork), Flexo Plywood Ltd. (solid doors), Slate Slab Products Ltd. (slate cills and thresholds), Tile Decorations Ltd. (tiling), William Harland and Son (distemper and paints),

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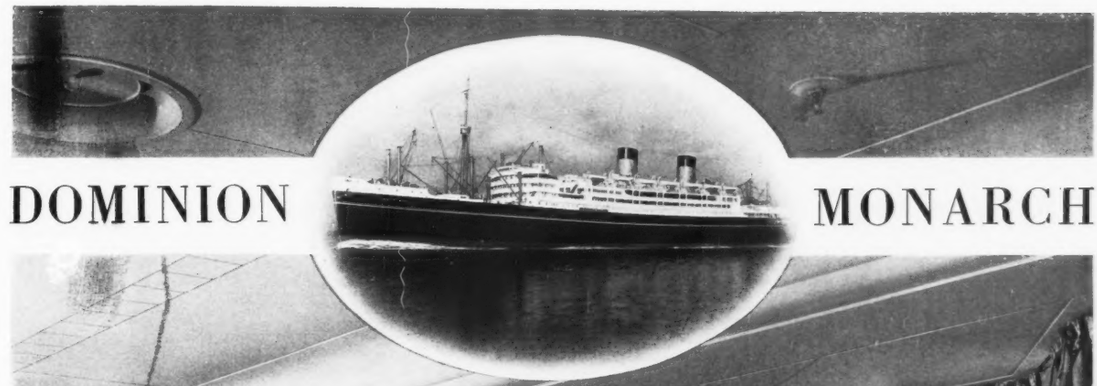

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Architect : J. C. Whipp, Esq.

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Factory at Welwyn.

Associated Architects : O. R. Salvisberg and C. Stanley Brown.

The general contractors were Holloway Bros. Ltd., who were also responsible for the excavation, foundations, and reinforced concrete and joinery, office and cloakroom fittings. Among the sub-contractors and craftsmen were the following: Williams Briggs and Sons, Ltd., Aqualite-Challenge (special roofings), W. B. Simpson and Sons Ltd. (Simpson blocks), Hunziker (Gt. Britain), Ltd. (bricks), Redpath Brown & Co., Ltd. (structural steel), Limmer and Trinidad Lake Asphalt Co. (rock asphalt), Lenscrete Ltd. (glass bricks, windows and roof lights), Acme Flooring and Paving Co. (jarrah and oak wood-block flooring), Sulzer Bros. (London) Ltd. (panel heating, boilers and water-softening plant), T. Clarke & Co. (electric wiring and electric heating), Frederick Thomas & Co. (electric light fixtures), Metallbau Koller (electric light fixtures, door furniture, casements, window furniture, metalwork), Matthew Hall & Co. (plumbing), Alfred Goslett & Co. (sanitary fittings), Broad & Co. (special tile staircases and wall and floor tiling), Dunlop Rubber Co. (rubber flooring to circular staircases, corridors, etc.), Comyn Ching & Co. (door furniture and cloakroom fittings), Phœnix Electric Co. (London) Ltd. (bells and call system), Post Office Telephones (telephones), D. Sebel & Co. Ltd. (iron staircases, metalwork and cloakroom fittings), C. B. Nutchey (curtains), E. J. and A. T. Bradford (Keene's plaster, external renderings and T.S.W.), Geilinger of Switzerland (door frames), Rainfordware Ltd. (ceramic ware), Fenning & Co. (travertine), Heal and Sons (textiles, board room table and chairs), Allen and Appleyard (carpets), A. Sanderson and Sons Ltd. (Salubra wallpapers), Herman Tachudin (furniture), British Tubular Co. (steel furniture, chairs, tables, etc.), Oakles Nurseries Ltd. (shrubs and trees), Gallenkamp & Co. Ltd. (laboratory fittings), Mather and Platt (fire hydrants), Art Metal Construction Co. and Globe Wernicke Co. (office fittings), Hammond Bros. and Champness Ltd. (lifts), Synchronome Co. Ltd. (clocks), Welwyn Garden City Water Co. (main water supplies).

•

Flats at Liverpool.

Architect : L. H. Keay. *Assistant :* F. H. Morley.

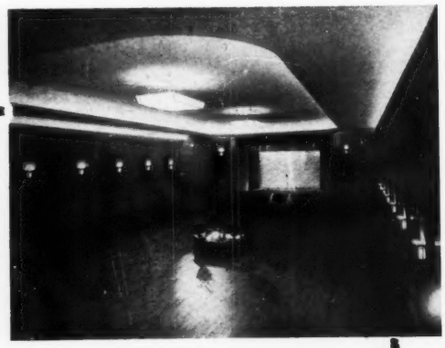
The general contractors were Tyson's (Contractors) Ltd., who were also responsible for the joinery. Among the sub-contractors and craftsmen were the following : Trussed Concrete Steel Co. Ltd. (reinforced concrete), Ravenhead Brick Co. Ltd. (bricks), Pearson Bros. and Campbell Ltd. (artificial stone), Blockleys (tiles), Wm. Altham (tilers), F. McNeill & Co. Ltd. (Lion brand roofing felt), J. Fitzgerald & Co. Ltd. (glass), Henry Hope and Sons Ltd. (steel door frames), Brunswick Restoration Co. Ltd. (lightning conductors), Workwell Range and Triplex Foundry Co. (grates), Wm. Morris and Bro. Ltd. (gasfitting and plumbing), Hall and Stinson Ltd. (electric wiring), Baxendale & Co. Ltd. (sanitary fittings, door furniture and window furniture), Northern Cement Construction Co. Ltd. (stair-treads), Pollick Bros. (London), Ltd. (plaster), Shaws Glazed Brick Co. Ltd. (mantels), Wm. Rowlands & Co. (shrubs and trees).

•

Library at Rottingdean.

Architects : Aileen and William Tatton Brown.

The general contractors were Margetts and Cook. Among the sub-contractors and craftsmen were the following : J. L. Kier & Co. Ltd., (reinforced concrete), Williamson Cliff Ltd. (bricks), Marbolith Flooring Co. Ltd. (patent flooring), Oswald Hollmann Ltd. (electric light fixtures), Williams and Williams Ltd. (casements), Finmar Ltd. (tables and armchairs), Thonet Bros. Ltd. (chairs).



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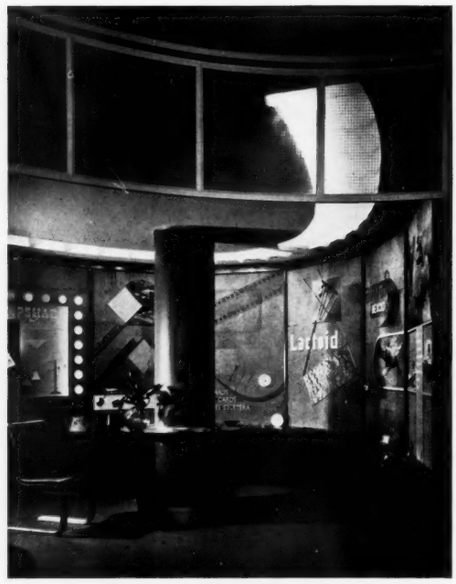

New showrooms for the British Xylonite Company, designed by Walter Landauer, of Industrial Design Partnership. The view shows a section of the Development Gallery.

By
BRIAN
GRANT

The Art of Display

It may be said that the principal function of a showroom is to demoralize sales-resistance, to create so lively an interest in the products displayed that the visitor, unsuspecting or otherwise, is, like the fly in the spider's web, just bound to succumb. If we care to judge them by their showrooms, the majority of our manufacturers are decidedly *gauche* in the art of selling.

•

An architect is, or should be, a most discriminating buyer—he is undoubtedly, viewed from the sales-manager angle, a very difficult individual indeed. But this is precisely as it should be, and one can find little patience and less sympathy for the commercial gent who is forever bleating that architects are more trouble than they are worth. If you are purchasing something for your own personal use or delectation, whether you buy wisely or not is nobody's concern but your own. The architect, acting as buying agent for his client, can take no chances. His inquisitiveness is not mere petulance; like Mr. Walker, he wants to *know*.

•

When looking through the advertisements in architectural papers I always wonder why it is that manufacturers are so reticent about giving facts. If one looks through the advertisement pages in this number of THE REVIEW will one find even the merest hint as to the cost of the products advertised? I think not. Will one find such information as *standard sizes, dimensions, recommended fixing details?* If not, why not? The architect wants to know.

•

The average showroom is singularly undemonstrative. The plan, equipment and decoration of a showroom is an architect's job whatever the nature of display required, and it is high time that manufacturers realized this, and particularly those manufacturers whose business is obtained largely through the specification of architects.

•

In my January notes I illustrated the showrooms of Messrs. Bakelite, Ltd., and Messrs. Pilkington. On this page and the next are views of the new showrooms designed by Walter Landauer, of Industrial Design Partnership, for the British Xylonite Company.

•

The Xylonite Company are the manufacturers of *Xylonite* and *Bexoid*, two "thermo-plastic" materials which have an infinite number of applications. *Bexoid*, in chemical language, is plasticised cellulose-acetate; both materials have cellulose as their chief component, but whereas acetic acid is used for *Bexoid*, nitric acid is employed in the production of *Xylonite*. In a photograph on the next page there is shown a general view of the main showroom. The glazed screen in the foreground is made of clear *Bexoid* cellulose acetate reinforced with $\frac{1}{2}$-inch steel wire mesh, a material which is marketed under the name of "Armourbex." The company's brochure informs me that this material is used extensively for outdoor illuminations where large, strong, translucent panels are required, but gives no indication as to precisely what they mean by "large" and nowhere can I find any mention of cost. It is just such omissions as this that infuriate the architect. Subsequent telephonic communication with the Xylonite Company produced the following particulars: Largest sizes in which sheets are available:—"Armourbex" 55 inches by 24 inches, "Super Armourbex" 60 inches by 26 inches. Price: ten shillings and thirty-one-and-six per sheet respectively. "Super Armourbex" sheets are thicker than the ordinary sheets and the quality of reinforcement is better, being welded at all the joints. Ordinary "Armourbex" can be cut with shears, cutting of the "super" sheets is done on a guillotine.

•

In the photograph above we see a section of the Development Gallery, the purpose of which is partly to show, and partly to suggest, new uses and new manufacturing methods for the raw materials produced by the company. The display panels round the gallery illustrate moulds and methods of manipulation, and show a number of special uses in the construction of aircraft; the panels are removable so that they can be altered to incorporate new developments and ideas. The table round the central column is in transparent *Bexoid*, and matt-finish "fins" in the same material are used on the lighting trough. A view on the next page shows a corner of the showroom where a series of photomurals provide interesting details

★
In the Cambridge University Library designed by Sir Giles Gilbert Scott, R.A., P.P.R.I.B.A., 'Noral' aluminium alloys were used throughout for the window frames, which were constructed by Messrs. James Gibbons, Limited.

Before he has put pencil to paper, the architect sees his building take shape before his eyes. He sees it bold and impressive, spacious and airy, and with 'firmness, commoditie and delight,' to borrow Sir Henry Wotton's splendid phrase.

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A.R.10

Two further views of the new showrooms for the British Xylonite Company, designed by Walter Landauer. Left a general view, and right, photo-murals showing some of the processes of manufacture in plastics.

of some of the processes employed in the manufacture of plastics and plastic products. The showrooms are at 4–7, Chiswell Street, London, E.C.1.

•

Keeping Time at the Bank

I am told that the re-building work at the Bank of England has been in progress for over fourteen years, the same informant also tells me that a certain quite eminent city financier has wagered a goodly sum of money on the likelihood of the Bank being demolished by aerial bombs prior to its completion. Time marches on.

Telling the time in the Court Room at the Bank is an "Empire" clock made by the Synchronome Company to the designs of Sir Herbert Baker and his engineer son, Mr. H. E. Baker. It tells the time in every part of H.M. Dominions. The central dial, an ordinary twelve-hour clock with Roman numerals, is encompassed by a skeleton ring carrying the twenty-four-hour numerals which rotates clockwise; the mural decoration around this rotating ring are symbols representing the principal Dominions and Dependencies of the Empire arranged in the correct positions of longtitude, or in their "time zones" in their order eastwards—anti-clockwise. The local time at each place is shown by the reading on the 24-hour dial opposite that point. At the top of the circle the British Lion on the Crown shows Greenwich time, and the time on the 24-hour dial opposite will be the same as that on the 12-hour clock in the centre (or one hour behind during Summer Time). Proceeding towards the east, anti-clockwise round the circle, we first have South Africa, two hours earlier, represented by the winged springbok and the South African floral emblem of the protea flowers. Next an early Arab ship fills the space of the Indian Ocean. India, represented by the star, is five and a half hours ahead of Greenwich. The ports of Singapore and Hong Kong are shown by an anchor. Australia, having three time zones (8, 9 and 9½ hours ahead) is represented by the wattle leaf and the four stars of the Southern Cross. At 11½ hours from Greenwich is New Zealand, whose symbol is the national symbol of the fern and the Southern Cross. Passing the Date Line where, travelling in this direction, one has to return to the previous date and day of the week, we enter the Pacific Ocean, shown by a four-masted ship. Then comes Canada, stretching over five hours or practically a quarter of the circumference of the globe; its five time zones are 4, 5, 6, 7 and 8 hours after Greenwich, and are each represented by a maple leaf. Finally the Atlantic Ocean is shown by a sailing ship. The clock is driven by half-minute impulses from a standard Synchronome master clock in an adjacent room and, being built upon the chimney breast without access from behind, is mounted upon a hinged iron frame enabling it to be swung out should attention to the movement become necessary at any time.

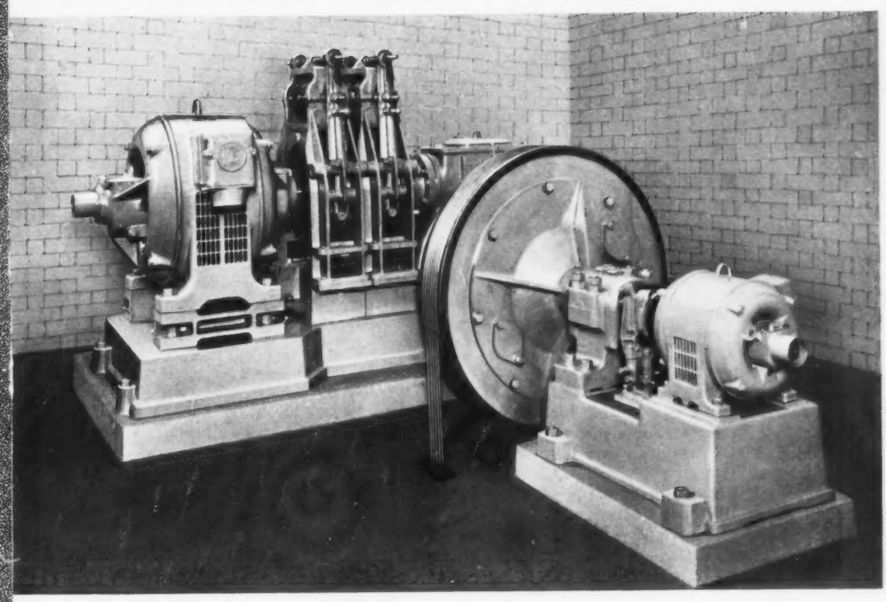
The "Empire" clock recently installed in the Court Room of the new Bank of England. Designed by Sir Herbert Baker in conjunction with Mr. H. E. Baker, it gives the time for every part of the British Empire. Surrounding the clock-face are symbols of the Dominions and the principal dependencies.

•

The "Mitchell Junior" Spring Hinge

In February of last year I described in these notes the "Mitchell" hydraulic spring-check door hinge—an example of intelligent and thoughtful industrial design providing door hinge and hydraulic door-check all in one compact and unobtrusive unit. At that time the hinge (in two types, single and double action) was made only in one size and quality. Recently the manufacturers have introduced the "Mitchell Junior." With each door two units are required—the check hinge (which should be fitted to the lower part of the door) and the spring hinge; some details from the

MICRO LEVELLING GEAR



The advantage of this new micro levelling gear is that it ensures continuous motion of the lift car until levelling is accomplished.

With other types the car comes momentarily to a standstill some inches short of its final position, and then travels slowly to the levelled position.

This momentary stop encourages passengers to open the gate before levelling is finished thus defeating the whole object of the device.

With this latest type of micro levelling gear the auxiliary motor which effects the movement of the car at reduced speed through the last few inches of its travel, is automatically started before the main motor is switched off. Special gearing within the rope drum transfers the drive from the main to the auxiliary motor without stopping or suddenly altering the speed of the car and thus causing a perceptible jerk.

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The "Mitchell Junior" spring hinge, a modification of the original hydraulic door check and hinge marketed by Messrs Evered and Company, Ltd., of Smethwick.

manufacturer's brochure are given here, and an illustration of the spring hinge accompanies these notes (in appearance the check hinge is identical with the spring hinge). Manufacturers' details: "A" type, for doors up to 75 lb. B.M.A., 67*s.* 6*d.*, Crobrite or Sylvex finish, 75*s.* per door set. "B" type, for doors up to 120 lb. B.M.A., 97*s.* 6*d.*; Crobrite or Sylvex finish, 109*s.* 6*d.* per door set. Fixing is similar to that of ordinary butt hinges, and no additional cutting of woodwork or flooring is necessary. The hydraulic check is fitted with a safety device allowing the door to be forcibly closed against compression without damage. Door is automatically held open at all angles after 115 degrees and will fold back to 180 degrees, where specially ordered doors can be held at any angle. Units can be adapted to suit metal doors and can also be supplied with reverse action where door is required to remain open. The manufacturers are Messrs. Evered & Company, Ltd., Surrey Works, Smethwick, Warwickshire.

•

Manufacturers' Literature

The British Electrical Development Association have just issued an excellent brochure on the subject of kitchen planning and equipment.

The Economy of Brick Construction is a practical and well illustrated bulletin on modern brick structures, with notes on design and construction published by the Clay Products Technical Bureau of Great Britain.

Aluminium Architectural Sections is published by Aluminium Union, Ltd., to provide full size sections, weights and other data covering an extensive range of those aluminium extruded sections most generally used in architectural work.

Industrial Lighting Handbook is a useful catalogue of lighting units, electrical accessories and special fittings for industrial buildings issued by the Edison Swan Electric Company.

•

Change of Address

The Amalgamated Roadstone Corporation, Ltd., have removed from Grosvenor Gardens to Universal House, 56–62, Buckingham Palace Road, S.W.1. Their new telephone number is Sloane 0888.

•

The Buildings Illustrated

St. Dunstan's, Brighton.

Architect: **Francis Lorne, of Sir John Burnet, Tait and Lorne.**

The general contractors were James Longley & Co. Ltd. Among the subcontractors and craftsmen were the following: Diespeker & Co. Ltd. (hollow tile and r.c. floors and staircases), Matthew Hall & Co. Ltd. (h.w. pipes, plumbing,

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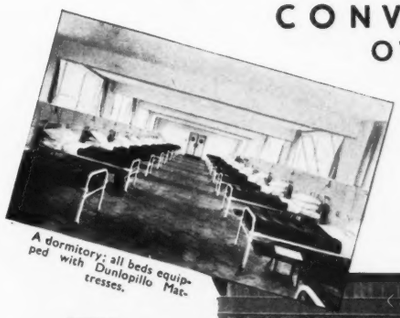
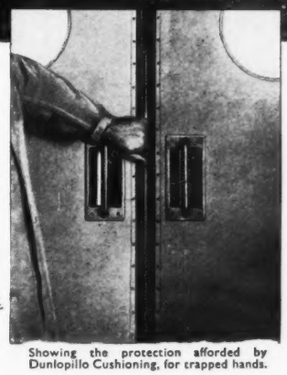


A dormitory: all beds equipped with Dunlopillo Mattresses.

Small dormitory showing Dunlopillo Mattresses and chair upholstered with Dunlopillo Cushioning.



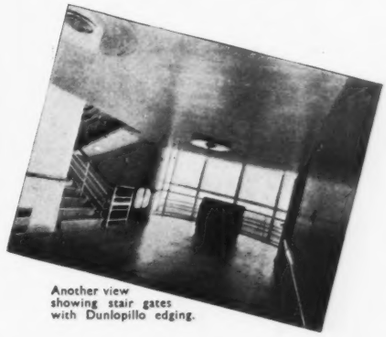
Showing the protection afforded by Dunlopillo Cushioning, for trapped hands.

The Chapel showing seats, and backsquabs in pews upholstered with Dunlopillo Cushioning.

Stair gates with Dunlopillo edging.

Swing Doors showing Dunlopillo Edging.

The Chapel showing Dunlopillo upholstered kneelers.



Another view showing stair gates with Dunlopillo edging.

THE DUNLOPILLO EQUIPMENT IN THIS HOME ALSO INCLUDES DUNLOPILLO BOLSTERS AND ADJUSTABLE BED CUSHIONS

Contractors: Maple & Co. Ltd., Tottenham Court Road, London, W.1.

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sanitary services), P. C. Henderson Ltd. (sliding door tracks and gear), Redpath Brown & Co., Ltd. (constructional steelwork), Stevens & Adams Ltd. (block flooring), Electrical Installations Ltd. (electrical installation), E.M.I. service through Electrical Installations Ltd. (radio installations), Claude-General Neon Lights Ltd. (neon sign), Frazzi Ltd. (Paropa roofing), Standard Flat Roofing Co. Ltd. (standard roofing), R. Y. Ames (facing bricks), Super Cement Co. Ltd. (supplying cement to general contractors), Barrett & Wright Ltd. (kitchen equipment, heating and h.w. supply, ventilation), John Booth & Sons Ltd. (roller shutters), Trussed Concrete Steel Co. Ltd. (reinforcing steel), F. & E. Eastman Ltd. (wall tiling, floor paving), Henry Hope & Sons Ltd. (steel casements), En-Tout-Cas Ltd. (tennis court), Trent Concrete Ltd. (artificial stonework), Marryat & Scott Ltd. (electric lifts), Lenscrete Ltd. (precast glass wall panels), Fenning & Co. Ltd. (travertine marble work), Light Steelwork Ltd. (stair balustrades, wall rails), Hoyle, Robson, Barnett & Co. Ltd. (glazement cement, glaze work), Pilkington Bros. Ltd. (glass dome), Piggott Bros. Ltd. (flagstaffs and radio masts), Vencercraft Ltd. (flush doors), Brighton Corporation Waterworks (ring water main), James Gibbons Ltd. (ironmongery), Eric Munday Ltd. (carving on foundation stone, metal lettering), James Clark & Sons Ltd. (silvered polished plates and glazing), Palmer's Travelling Cradle and Scaffold Co. Ltd. (window-cleaning cradle), A. C. W. Hobman Ltd. (granolithic paving), Brighton Corporation Electricity Undertaking (service cable), Celotex Ltd. (Acousti-Celotex), Hickmans Ltd. (fittings), Pyrene Co. Ltd. (Pyrene hose reel), Gent & Co. Ltd. (electric clocks), Everett Edgcumbe & Co., Ltd. (electric chiming clocks), Limmer & Trinidad Lake Asphalt Co. Ltd. (paving blocks), Sturtevant Engineering Co. Ltd. (air-raid precaution ventilation plant), John Compton Organ Co. Ltd. (manual organ, pipe front to organ loft), Accordo Blinds Ltd. (Accordo blinds), John Brown (contractors) Ltd. (surfacing concrete driveway with settite), Durasteel Roofs Ltd. (shutters and frames), Boulton Tubular Structures Ltd. (Boulton tube shores), Maple & Co. Ltd. (furniture), St. Dunstan's Workshops (furniture and fibre mats), Goodlass Wall & Co. Ltd. (supplying plant), Turner's Asbestos Cement Co. (bath panels and splashbacks), Gas Proofing Co. Ltd. (sealing device for doors), W. Lusty & Sons Ltd. (Lloyd Loom tables, chairs), Whitfields Bedsteads Ltd. (beds), Dunlop Rubber Co. Ltd. (Dunlopillo mattresses and bolsters, door edging), Simpson Baker & Co. Ltd., Troughton & Young Ltd. (electric light fittings), General Fire Appliance Co. Ltd. (fire extinguishers), North British Rubber Co. Ltd. (rubber mats to lifts), Yeomans & Partners (cellulose finish to internal doors), E. Pollard & Co. Ltd. (kiosk unit in entrance hall), Dominion Rubber Co. Ltd. (garden hose and fittings), Berry's Electric Ltd. (adjustacol fires and interiors, special grate), Pulham & Sons (garden work), Kenneth McCutcheon (models), A. Over & Sons (plastering), Fredk. Braby & Co. Ltd., (copperwork), L. Dutton & Son (cork), Doulton & Co. Ltd. (sanitary fittings) Astolat Ltd. (fencing), Sussex Brick Co. Ltd. (foundation bricks), Hall & Co. Ltd. (flettons, aggregates and general building materials), F. McNeill & Co. Ltd. (partition slabs), Roberts Adlard & Co. Ltd. (cement), British Reinforced Concrete Engineering Co. Ltd. (fabric reinforcement), Sevvants (Brighton) Ltd. (plumbing), Pepper & Son (building materials), John Bolding & Sons Ltd. (towel rails).

•

House at Poole, Dorset.

Architect: **Oliver Hill.**

The general contractors were Jenkins & Sons Ltd. Among the sub-contractors and craftsmen were the following: Smith Walker & Co. (constructional steelwork), G. N. Haden & Sons Ltd. (central heating), S. T. Meggitt & Son (electrical work), Crittall Manufacturing Co. Ltd. (metal casements), Educational Supply Association Ltd. (sliding windows and doors), Art Pavements & Decorations Ltd., Carter & Co. Ltd., Martin Van Straaten & Co. Ltd. (tiling and terrazzo),

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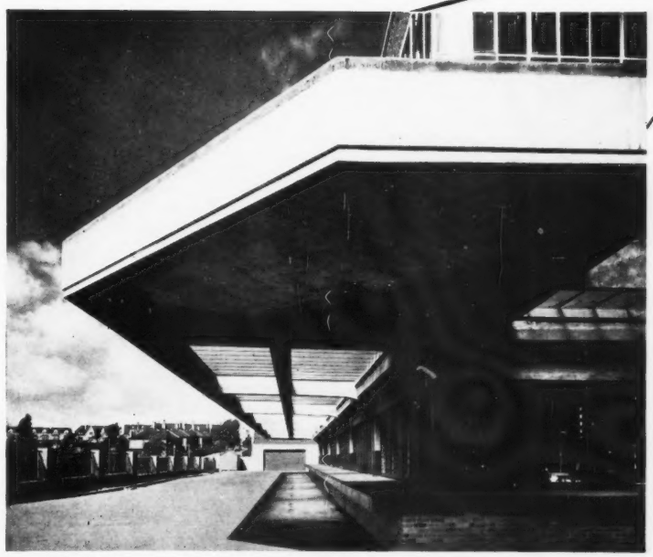

New Co-operative Society's Bakery at Stechford, Birmingham.
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Assistant Architect: C. L. PAICE, F.I.A.A.

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•

Flats in Bloomsbury.

Architects: **Marshall and Tweedy; S. F. Burley, *Assistant*.**

The general contractors were Kirk and Kirk Ltd., who were also responsible for the excavation, dampcourses, partitions, glass, fireproof doors, joinery and pine wood. Among the sub-contractors and craftsmen were the following: Flooring Contracts Ltd. (foundations and reinforced concrete), R. Y. Ames Ltd. (bricks), D. G. Somerville Ltd. (Durus stone), Hollis Bros. & Co. Ltd. (gurjun and oak flooring), Matthew Hall Ltd. (central heating), Berkeley Electrical Engineering Co. Ltd. (electric wiring), Figg & Co. Ltd. (stairtreads), Comyn Ching & Co. (London) Ltd. (door furniture), Williams and Williams Ltd. (casements and window furniture), Kingsmill Metal Co., Ltd. (metalwork), Peerless Kitchen Cabinets Ltd. (Peerless built-in furniture), Dennison and Millais Ltd. (furniture), Marryat and Scott Ltd. (lifts), Smith's English Clocks, Ltd. (clocks).

•

Sports Pavilion in Middlesex.

Architects: **Mitchell and Bridgwater.**

The general contractors were Melsom and Rosier. Among the sub-contractors and craftsmen were the following: London Brick Co. Ltd. (bricks), Constone Ltd. (patent stone), Ruberoid Co. Ltd. (roofing and roof tiling on balcony), Stuart's Granolithic Co. Ltd. (granolithic floor), Hollis Bros. & Co. Ltd. (dance floor), Crittall Manufacturing Co. Ltd. (metal windows), A. H. Cornwall Ltd. (electrical installation), Eca-Ray Sales Ltd., C. M. Churchouse (electric light fittings), John Drake & Co. (Egham) Ltd. (heating and hot water installation), John Bolding and Sons Ltd. (sanitary fittings), Hill and Smith, Ltd. (railing and gates), Birmingham Guild Ltd. (lettering), Bratt Colbran Ltd. (fireplaces), Wing and Webb Ltd. (door furniture), Pel Ltd. (furniture), James Walker (Architectural Decorations) Ltd. (special bar fitting, etc.), Granitese (Gt. Britain) Ltd. (wall surfacing of shower rooms), J. H. Sankey and Son Ltd. (Sankey downdraught preventing pots).

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Corrigenda

Accompanying illustrations of the Chislehurst and Sidcup County School for Boys, at Sidcup, Kent, illustrated in the March ARCHITECTURAL REVIEW, the name of Mr. John W. Poltock should have been added to that of Mr. W. H. Robinson, the architect, as the chief assistant on the scheme.

COIMISIÚN NA STÁT-SHEIRBHÍSE.

Positions Vacant: Temporary Assistant Architects, Grade II.

Application forms for and full particulars of vacancies in the Office of Public Works for Temporary Assistant Architects, Grade II, may be obtained free from the Secretary, Civil Service Commission, 45, Upper O'Connell Street, Dublin.

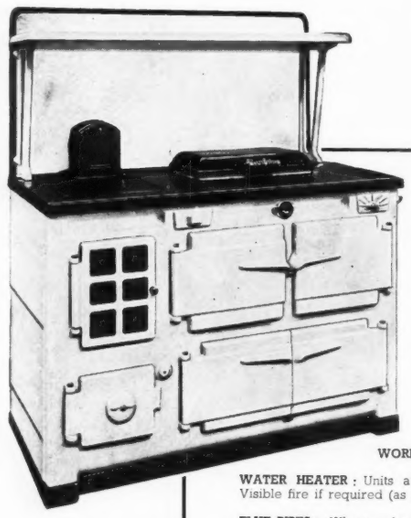
Age Limits: 24 to 35 years.

Salary Scale: £7—£10 a week inclusive for men. £5 10s.—£8 a week inclusive for women.

Successful candidates with special qualifications or experience may be allowed a higher starting salary than the minimum of the scale.

Successful candidates must be prepared to take up duty at an early date subsequent to Interview.

Prospective candidates should make immediate application to the Civil Service Commission.



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COOKING CAPACITY: Up to 10 persons (ordinary household menus).

SMOKELESS SOLID FUEL; Anthracite recommended, 1¼" x ⅜". 1½-2 tons yearly for cooker. Water Heater—burns anthracite or coke.

PRICES: Cooker only from £49.10. (Delivery and Erection extra.) Cooker with Water Heater from £67. (Delivery and Erection extra.)

ENAMEL FINISHES. Cream (standard); blue, grey or green in light or dark shades.

FLOOR SPACE: Cooker only - - 35¼" wide 24¼" deep.
Cooker with Water Heater 47¾" „ 24¼" „

HEIGHT: Without Back Panel (to top plate) - - - - - 33¼"
„ „ „ (in recess allowing for boiling plate cover) 51"
With Back Panel - - - - - - - - - 53⅜"
„ „ „ and Plate Rack in recess allowing 10" above Plate Rack - 62⅜"

WORKING WEIGHT: Nett from 250 lb. per square foot.

WATER HEATER: Units available for storage cylinders from 30-65 gallons. Visible fire if required (as illustrated).

FLUE PIPES: Where only a short length is necessary, 3" Asbestesse, 3½" cast iron. If longer, 3" pipe should be enlarged to 4." With Water Heater—4½" Asbestesse, 5" Cast Iron.

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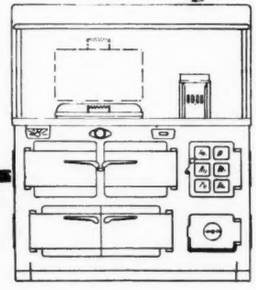

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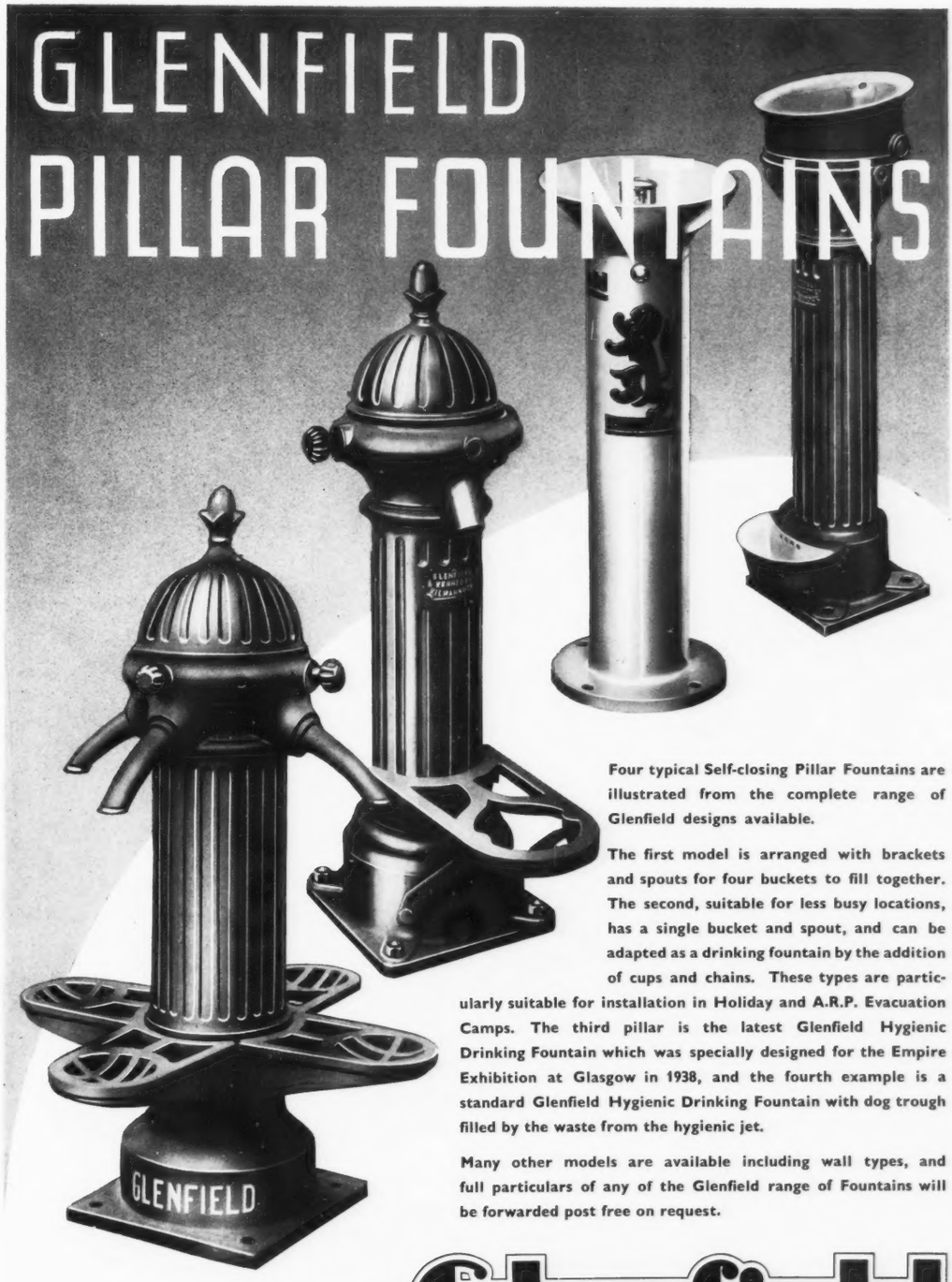

Four typical Self-closing Pillar Fountains are illustrated from the complete range of Glenfield designs available.

The first model is arranged with brackets and spouts for four buckets to fill together. The second, suitable for less busy locations, has a single bucket and spout, and can be adapted as a drinking fountain by the addition of cups and chains. These types are particularly suitable for installation in Holiday and A.R.P. Evacuation Camps. The third pillar is the latest Glenfield Hygienic Drinking Fountain which was specially designed for the Empire Exhibition at Glasgow in 1938, and the fourth example is a standard Glenfield Hygienic Drinking Fountain with dog trough filled by the waste from the hygienic jet.

Many other models are available including wall types, and full particulars of any of the Glenfield range of Fountains will be forwarded post free on request.

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HYDRAULIC ENGINEERS TO THE EMPIRE

The Kaleidakon at the Ideal Home Exhibition, Earl's Court. In the left foreground can be seen the Strand Electric lighting console; round the gallery are a series of sculptured figures executed in plywood.

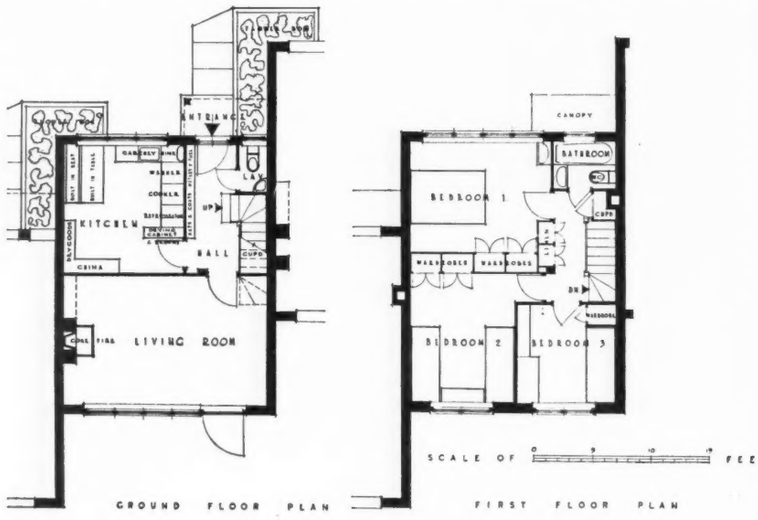
Trade News and Reviews

By BRIAN GRANT

The Ideal Home Exhibition

THE Ideal Home Exhibition, 1939, was presented for the first time at the mammoth Earl's Court building. This has given us our first opportunity of assessing the merits and demerits of Howard Crane's outsize creation as a home and setting for large scale exhibition. Please do not start an argument by suggesting that the Motor Show and the B.I.F. have already provided this opportunity—they have not. True they were both exhibitions, they were both large scale exhibitions, but in neither case was any attempt made to "fit the exhibition to the building," if you know what I mean.

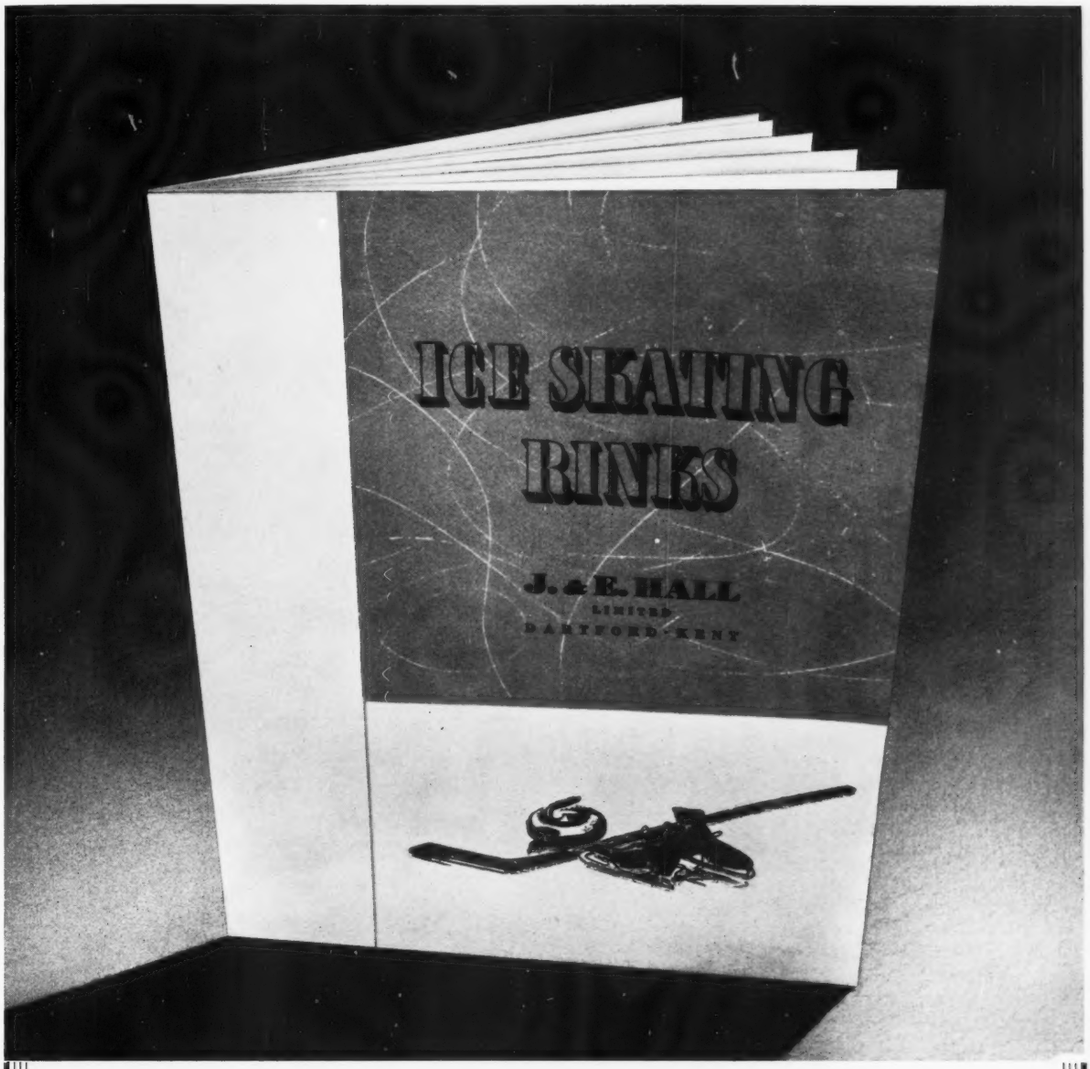
At Olympia in past Ideal Home exhibitions Ian Jeffcott has always contrived deliberately to conceal the structural character of the building; at Earl's Court this year he, rightly or wrongly, created an interior design and setting that gave emphasis to the sombre solidity of Crane's reinforced concrete structure. I rather doubt whether he will again adopt this same technique for it is clear that the building, as an exhibition centre, has many defects. In this, his first exhibition at Earl's Court, I am inclined to the view that Jeffcott was wise in his decision to "express" the character of the building rather than camouflage it; the experiment will have taught him much and it will be interesting to see in what manner he tackles the same job in 1940.



Left, ground and first floor plans of the "All Europe" house at Earl's Court, designed by Elizabeth Denby, referred to on the next page.

The Kaleidakon

The Earl's Court building, unlike Olympia, is dependent entirely upon



A NEW PUBLICATION

Whilst it is more usual for us to advertise our Lifts and Escalators in these pages, may we remind Architects that J. & E. Hall Ltd. are Britain's largest manufacturers of Refrigerating Plant and Equipment, one application of which is described in Publication No. 889, "Ice Skating Rinks".

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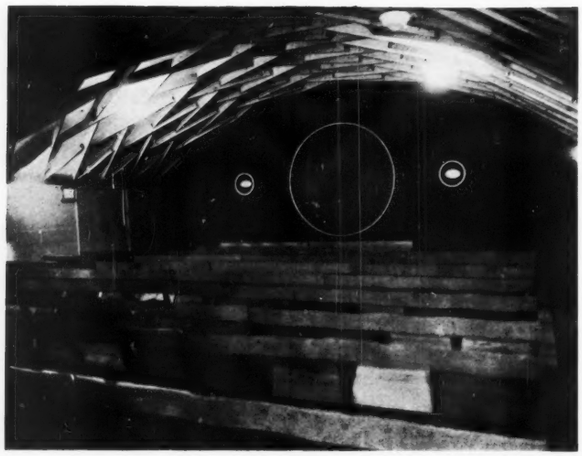

The Micro-Zoo at Earl's Court designed by Ian Jeffcott.

artificial lighting. This factor undoubtedly gave birth to the Kaleidakon, designed as a tower of light to be the central feature and *piece de resistance* of the exhibition. It was somewhat disappointing but the details of construction are not without interest.

The design of the steel scaffolding for the skeleton framework of the Kaleidakon presented a structural problem because of the need to keep the fins as thin as possible at the outside edges, and the impossibility of tying the structure to any permanent part of the building. This was solved by forming a centre core, 6 feet square, of 2-inch standards tied at 6 feet intervals by ledgers which projected beyond the core to carry the centre plaster cove. The ledgers forming the outer fins were taken right through the inner core and fastened to the inner core ledgers above and below from opposite sides. These outer ledgers crossed over each other towards the outside edge, thus forming diagonal bracing to the inner core and at the same time triangulating the frame of the fin; two standards for the fins were placed on each side of the intersection of the ledgers thus effectively locking the triangles in all directions. Lighting was from two sources, an inner lighting batten being concealed behind the central plaster cove and outer lighting battens on each of the fin ends were concealed behind the precast plaster coves carried by the end standards. The complete lighting system, which is claimed to give the greatest control over lighting effects yet invented, was designed by Frederick Bentham and produced by the Strand Electric and Engineering Company. The Strand people have, by the way, recently opened a new demonstration theatre at their offices in Floral Street, Covent Garden where they will be very pleased to explain and demonstrate to architects the principal governing the working of the light console and other forms of decorative lighting apparatus designed by their engineers. In the photograph on the previous page the Strand lighting console and the Compton organ can be seen on the left-hand edge of the pool immediately opposite the Kaleidakon.

The sculptured figures around the gallery were designed by Professor Ernst Stern and symbolized the various trades concerned in home-building. Each figure, 17 feet high, and weighing approximately 5 hundredweights only, was constructed of plywood. The figures, the temporary corbels on which they stand and the plywood arches were finished in plastic paint, concrete colour, to give the appearance that they were part of the existing concrete building; with such details as these Ian Jeffcott contrived to relieve the building of its extreme bareness and at the same time give emphasis to its structural character.

The housing section was dull in the extreme, relieved only by Elizabeth Denby's "All Europe" house, so called because its creator has borrowed ideas from many different countries and combined them in a modest dwelling-house which could be built and equipped for approximately £500. The plan of the house accompanies these notes. The standard equipment includes: built-in wardrobes and lots of cupboards, a special system of refuse disposal, and a well equipped kitchen-dining-room. The house is the usual subsidy size, 860 square feet. There is a living-room, a good sized kitchen, a small downstairs lavatory and on the first floor three bedrooms and a combined bathroom and lavatory.

One of the most entertaining of the side-shows was "The Story of an English Room" which traced the interior decoration and furnishing of a room from 1711 to 1939—from Queen Anne to Chippendale, from Chippendale to Regency, from Regency to lavish Victorian and, finally, "Hayes Marshall — 1939." Tut-tut, Mr. Marshall! Another side-show that received, and deserved, a lot of attention was the Micro-Zoo arranged by E. H. Ellis. Mr. Ellis will be better known to architects as the editor of that outspoken little journal "Plastercraft" and independent consultant on all matters relating to plaster uses and plaster troubles—microbes are his hobby.

•

A Combined Drinking Fountain and Tap

Messrs. Glenfield & Kennedy, the hydraulic engineers of Kilmarnock, send

Right, two positions of the combined tap and drinking fountain recently put on the market by Messrs. Glenfield and Kennedy, to which reference is made on this page.

Aluminium Glazing Bars

39.42.

Glazing Bar Installation at the Westminster Central Depot, London.

Photo. courtesy : Williams & Williams Ltd. (Glazing Bars).
Architect : G. Grey Wornum, F.R.I.B.A.
Contractors : W. & C. French Ltd.

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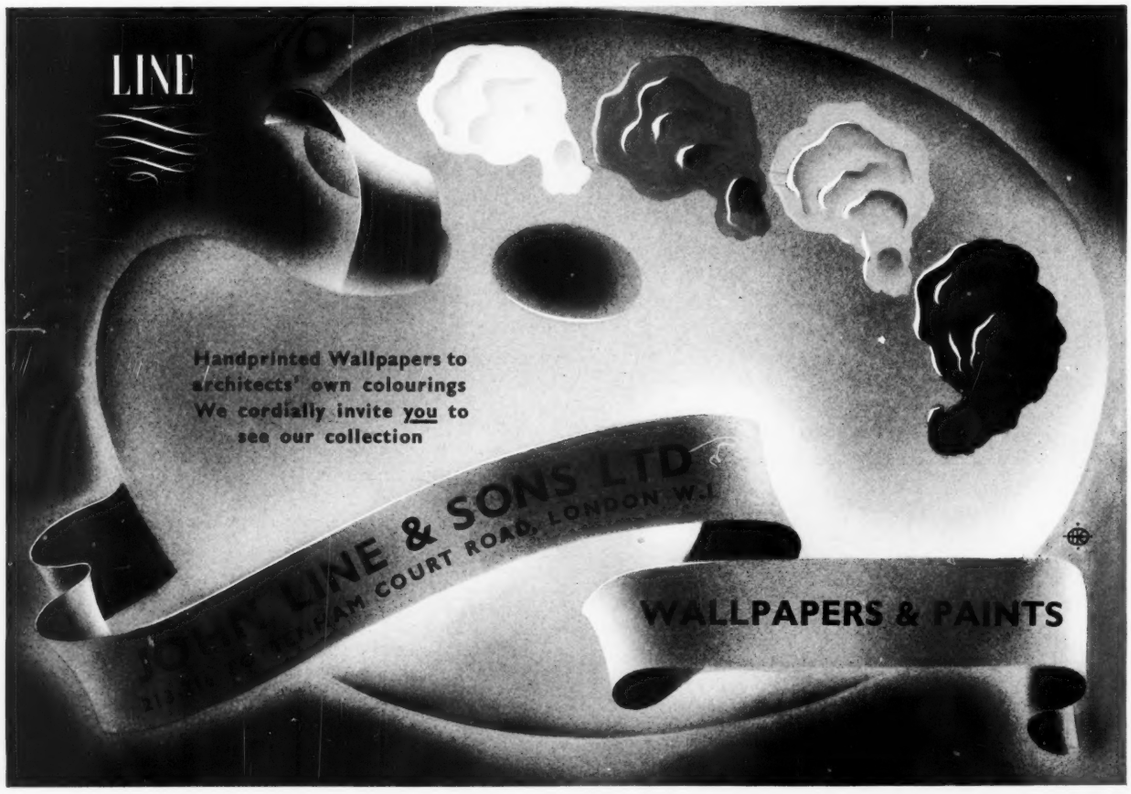
me a copy of their house magazine "The Glenfield Gazette" and, of much more immediate interest to architects, particulars of a combined drinking fountain and tap which they have recently put on the market. I have had two sketches made showing how this tap-cum-fountain works. At first sight one is inclined to view the fountain fitting as a somewhat superfluous adjunct, but on reflection one comes to the conclusion that it is in fact an extremely sensible and useful fitting. Since the tap in the sketch obviously supplies drinking water why not an ordinary cup for drinking out of, an enamel one if you fear breakage, chained to the wall if you would obviate theft; that sounds all right but have you seen drinking cups in factories and schools, chipped and dirty, splendid instruments for the dissemination of epidemics. In many schools, factories and hospitals today drinking fountains have been selected as the most hygienic method of supply, but there is this objection to the fountain, it is well-nigh impossible to fill kettles or cans from it. I think, therefore, that Messrs. Glenfield & Kennedy are to be congratulated upon their solution of the problem. The water supply passes through the tap or fountain according to the position of the fountain unit, when the latter is pushed back out of the way, as shown in the second sketch, the tap comes into operation. Very simple, very sensible, and the price is 65s. (Glenfield & Kennedy, Ltd., Kilmarnock, Scotland.)

Leonard thermostatic water mixing valve serving dental basins at the Woolwich Borough Council Health Clinic.

Thermostatic water mixing valves

I have not had experience in the installation of shower bath equipment but have been told, by those with experience, that the American type of mixing valve, thermostatically controlled, is superior to anything produced by manufacturers in this country. Walker Crosweller engineers presumably held the same opinion as other British valve manufacturers until, a year or two back, they were asked by a leading hospital authority to recommend a good mixing valve for hot and cold water that would automatically regulate the temperature of the blended water. Having heard good reports of the thermostatic valve made by the Leonard Company of America they imported a number of sample valves and submitted them to a series of tests; the results were in every way satisfactory both to



WESTMINSTER HOSPITAL

ARCHITECTS: ADAMS, HOLDEN & PEARSON, FF.R.I.B.A.
CONTRACTORS: HOLLOWAY BROTHERS (LONDON) LTD.

Also contractors for **New Chelsea Bridge,** opened May 6, 1937, and **"Kingston House" Flats, Knightsbridge.**
Both these contracts are described in this issue.

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NEW MODEL BAKERY, for the Aerated Bread Co., Ltd., Camden Town, London, N.W.1	ENGINEERS: SIR ALEXANDER GIBB & PARTNERS.
ROYAL CANCER HOSPITAL, Laboratory	MESSRS. HENRY TANNER, FF.R.I.B.A.
WANDSWORTH BRIDGE, Reconstruction and Widening	T. PEIRSON FRANK, M.INST.C.E., F.S.I., CHIEF ENGINEER, L.C.C. E. P. WHEELER, F.R.I.B.A., CHIEF ARCHITECT TO THE L.C.C.
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themselves and to the hospital authority who had made the enquiry. They imported more valves and, despite the high selling price due to import duties, had no difficulty in disposing of them. The next step they took was the obvious one, they obtained a licence to manufacture in this country and immediately erected a suitable factory . . . . Now that the valves are in production in this country considerable reductions have been made in the prices which now range from £4 15s. to £17 according to the size required. There are two standard types :—Type T, made in two sizes with a capacity of 8 gallons and 12 gallons per minute respectively and type R which is made in three larger sizes with capacity ranging from 15 gallons per minute to 45 gallons. It is claimed that whatever variations may occur at the inflow the temperature of the water at the outflow will remain steady ; if the pressure varies the thermostat moves to compensate for it. If too much cold comes down the pipe the thermostat closes the port that admits it ; if too much hot, it closes the port that admits the hot. If the hot water begins to lose its heat, the thermostat gradually closes off the cold and lets in more hot to make up for it.

In their brochure describing the valve the manufacturers are very thorough and helpful. Dimensional and price details of the various types are set out conveniently in tabulated form. (Walker Crosweller & Co. Ltd., Cheltenham. London Office—6 Gordon Square, W.C.1.)

The Buildings Illustrated

Peter Jones Store, Sloane Square.

Architects : William Crabtree, associated with Slater and Moberly.

Consultant Architect : C. H. Reilly.

The general contractors were John Lewis & Co. Ltd. Among the sub-contractors and craftsmen were the following :—Coles Demolition & Excavation Co. Ltd. (demolition and excavation), Sika-Francois Ltd. (dampcourses basement and retaining walls, waterproofing materials), Trussed Concrete Steel Co. Ltd. (Hyrib reinforced concrete), Carter & Co. Ltd. (tiles), Imperial Chemical Industries Ltd. (Pioneer blocks, partitions), J. H. Sankey & Son Ltd. (partitions), Compton Bros. Ltd. (glass), Horsley Smith & Co. Ltd. (woodblock flooring), Bastian & Allen Ltd. (boilers), Zeiss Ikon Ltd., Best & Lloyd Ltd. (electric light fixtures), Matthew Hall & Co. Ltd. (plumbing and water supply), Diespeker & Co. Ltd., Malcolm MacLeod & Co. Ltd. (stairtreads), Yannedis & Co. Ltd. (door furniture and cloakroom fittings), Parker, Winder & Achurch Ltd. (door furniture), Bostwick Gate & Shutter Co. Ltd. (folding gates), James Gibbons Ltd. (door furniture), John Booth & Sons Ltd. (rolling shutters), Fredk. Braby & Co. Ltd. (iron staircases), Caston & Co. Ltd., Cooles (metalwork), J. P. White & Sons Ltd. (joinery), Fenning & Co. Ltd., John Stubbs & Sons Ltd. (marble), Parnall & Sons Ltd., Waring & Gillow Ltd. (shop fittings), Peter Jones Ltd. (textiles), H. Young & Co. Ltd. (steelwork, cranes), Henry Hope & Sons Ltd. (windows, patent glazing), Haskins (canopy, metalwork, sunblinds, signs), Helical Bar & Engineering Co. Ltd. (concrete floor and fireproof construction), Waygood-Otis Ltd. (lifts), James Combe & Co. Ltd. (central heating), Shanks & Co. Ltd. (sanitary fittings), Hoyle, Robson, Barnett & Co. Ltd. (glazement), Limmer & Trinidad Lake Asphalte Co. Ltd. (asphalt), Drake & Gorham Ltd. (electrical switch gear), Hibberd Bros. Ltd. (joinery), G. Parnall & Co. Ltd. (shop fronts, etc.), Lamson Pneumatic Tube Co. Ltd. (vacuums and credit tubes), J. T. Cartwright & Sons Ltd. (electric fittings), W. A. Telling Ltd. (plastering), Rusts Vitreous Mosaic & Tile Co. Ltd. (mosaic paving), Marbolith Flooring Co. Ltd. (cork tiling), T. & W. Ide Ltd. (plate glass) Callenders Cable & Construction Co. Ltd. (electric cables), London & Midland Steel Scaffolding Co. Ltd. (steel scaffolding), Stedall & Co. Ltd. (ironmongery), William Mallinson & Sons Ltd. (timber floors), Mather & Platt Ltd. (automatic sprinklers), Ham River Grit Co. Ltd. (sand, ballast, etc.), Birmingham Guild Ltd. (balustrades), Brilliant Signs Ltd. (signs), E. Coules & Sons Ltd. (handrails), Electro Metal Plasters Ltd. (spray painting and external decoration), London

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●

Hospital at Chichester.

Architect : **C. G. Stillman.**

The general contractors were Anglo-Scottish Construction Co. Ltd. Among the sub-contractors and craftsmen were the following :—G. Asserati Ltd. (asphalt), Trussed Concrete Steel Co. Ltd., British Reinforced Concrete Engineering Co. Ltd. (reinforced concrete), Nutbourne Brick Works Ltd. (bricks), Blokcrete Co. Ltd. (artificial stone and stone), Matthew T. Shaw & Co. Ltd. (structural steel), Pilkington Bros. Ltd. (glass), J. A. King & Co. Ltd. (partitions—clinker concrete, partition blocks), B. Holden & Co. Ltd., Granwood Flooring Co. Ltd. (patent flooring), G. N. Haden & Sons Ltd. (central heating), Benham & Sons Ltd. (" Panelite " heating panels), William Sugg & Co. Ltd. (gas fixtures, gas incinerators), Hall Boilers Ltd. (Halco boilers), B. French Ltd. (electric wiring), Falk Stadelmann & Co. Ltd., Fredk. K. Thomas & Co. Ltd. General Electric Co. Ltd. (electric light fixtures), Santon Ltd. (electric heating—electric thermal storage heaters), Benham & Sons Ltd. (ventilation, kitchen equipment), Burn Bros. Ltd. (plumbing). Shanks & Co. Ltd., Leeds Fireclay Co. Ltd. (sanitary fittings), Sumerling & Co. Ltd. (sterilizing equipment), James Gibbons Ltd. (door furniture), Crittall Manufacturing Co. Ltd. (casements and window furniture), Gent & Co. Ltd. (bells), Coldair Ltd. (refrigerating plants and cold cabinets), Frank V. Magrini Ltd. (food trolleys), Granitese Ltd. (seamless cement glazing), Casebourne & Co. Ltd. (pioneer plaster), Light Steel Sectional Constructions Ltd. (metalwork, bedside screens), Carter & Co. Ltd. (tiling), Hammond Bros. & Champness Ltd. (lifts), Magneta Time Co. Ltd. (clocks), Horseley Bridge & Thomas Piggott Ltd. (water softening plant), W. N. Froy & Sons Ltd. (mantels).

●

Flats in Kensington.

Architect : **Michael Rosenauer.**

The general contractors were Holloway Bros. Ltd. Among the sub-contractors and craftsmen were the following : William Covell Ltd., Willment Bros. Ltd. (demolition), G. M. Callender & Co. Ltd. (" Ledkore " dampcourse ; Callender's air-insulated flat roof covering), Excel Asphalte Co. Ltd. (asphalt), Blockleys Ltd. (bricks), Emerson and Norris Ltd. (artificial stone), Dorman Long & Co. Ltd. (structural steel), Frazzi Ltd. (Paropa roofing), A. Goslett & Co. Ltd., A. Goldstein & Co. Ltd. (glass), T. and W. Ide Ltd. (fire-resisting glass), Haywards Ltd. (patent glazing), Stevens and Adams Ltd. (oak strip flooring), Caxton Floors Ltd. (patent flooring), Young Austen and Young Ltd. (central heating, boilers, ventilation), Gas Light and Coke Co. Ltd. (gasfitting), Troughton and Young Ltd. (electric wiring and light fixtures), Matthew Hall & Co. Ltd. (plumbing), Doulton & Co. Ltd. (sanitary fittings), N. F. Ramsay Ltd., Nettlefold and Sons Ltd. (door furniture), Williams and Williams Ltd. (casement and window furniture), Bolton Gate Co. Ltd. (folding gates), Mather and Platt Ltd. (rolling shutters), George Wright Ltd. (iron staircases, W.I. work), George Rome Ltd.

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Architects: Messrs. T. P. Bennett & Son

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Cottages at Stratford-on-Avon.

Architects : F. W. B. Yorke and F. R. S. Yorke.

The general contractors were J. G. Fincher & Co. Among the sub-contractors and craftsmen were the following :—Cement Marketing Co. Ltd. (Bricks—London stocks, Sittingbourne), Turners Asbestos Cement Co. Ltd. (asbestos cement, corrugated sheeting for roof), Vitrea Drawn Sheet Glass Co. Ltd., Chance Bros. & Co. Ltd. (glass), Celotex Co. Ltd. (ceilings), Triplex Foundry Ltd. (grates), Cannon Iron Founders Ltd. ("Wallflower" gas fires), H. Dixon (electric wiring), Leeds Fireclay Co. Ltd. (kitchen sinks), Dryad Metal Works Ltd. Evered & Co. Ltd. (door furniture), Lewis Berger & Sons Ltd. (paint), Midland joinery Co. Ltd. (joinery).

New Chelsea Bridge.

Architects : G. Topham Forrest and E. P. Wheeler.

Engineers : Rendel, Palmer & Tritton.

The general contractors were Holloway Bros. Ltd. Among the sub-contractors and craftsmen were the following : Furness Shipbuilding Co. Ltd. (fabricated steelwork), Wrights' Ropes Ltd. (steel wire ropes for suspension cables), W. Shaw & Co. Ltd. (steel castings), Head, Wrightson & Co. Ltd. (forgings and hangers), Walter Macfarlane & Co. Ltd. (handrails and balustrades), Copper-Wettern & Co. (Cornish and Aberdeen granite), Acme Flooring and Paving Co. Ltd. (wood paving), Associated Asphalt Co. Ltd. (asphalt work), Cement Marketing Co. Ltd. (cement), Wm. Cory and Sons (shingle and sand), Dorman Long & Co. Ltd. (steel piling), Eastwoods Ltd., Hall & Co. Ltd. (bricks), Samuel Williams & Son Ltd. (paving slabs), J. Dampney & Co. Ltd. (painting), British Reinforced Concrete Eng. Co. Ltd. (road reinforcement), City Electrical Co. Ltd. (electric wiring), General Electric Co. Ltd. (electric light fixtures).

●

Office Building, Finsbury Square.

Architects : Messrs. Joseph.

The general contractors were Trollope and Colls, Ltd., who were also responsible for the plumbing, foundations, concrete, electric wiring, etc. Among the sub-contractors and craftsmen were the following :—Goodman Price, Ltd. (demolition and excavation), Lawfords Asphalte Co. Ltd. (asphalt), Ryarsh Brick Co. Ltd., Flettons, Ltd. (bricks), Wandsworth Stone Masonry Co. Ltd. (stone), Emerson and Norris, Ltd. (artificial stone), Shaws Glazed Brick Co. Ltd. (Whitebrick, terra-cotta exterior and interior faience works), Redpath Brown & Co., Ltd. (structural steel), Frazzi, Ltd. (special roofings), Nicholls and Clarke, Ltd. (glass), Young, Austen and Young, Ltd. (central heating), Gas Light and Coke Co. Ltd. (gasfitting), Dent and Hellyer Ltd. (sanitary fittings), Carter & Co. Ltd. (stairtreads), Nettlefold and Sons Ltd. (door furniture), Crittall Manufacturing Co. Ltd. (casements and window furniture), Caston & Co. Ltd. (doors to lift openings), F. A. Norris & Co. Ltd. (iron staircases), S. Elliott and Sons (Reading) Ltd. (revolving doors), Plastering Ltd. (plaster), J. Starkie Gardner Ltd. (metalwork), Hammond Bros. and Champness Ltd. (lifts), F. C. Flack Ltd. (Vi-block partitions), Bull Motors (Branch of E. R. and F. Turner Ltd.) (Bull super silent motors).

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Corrigenda

In a review of the St. Dunstan's Home, Brighton, in the May ARCHITECTURAL REVIEW, page 255, Dunlopillo Cushioning was inadvertently referred to in general terms as "sorbo" cushioning.

When the question is

SILENCE

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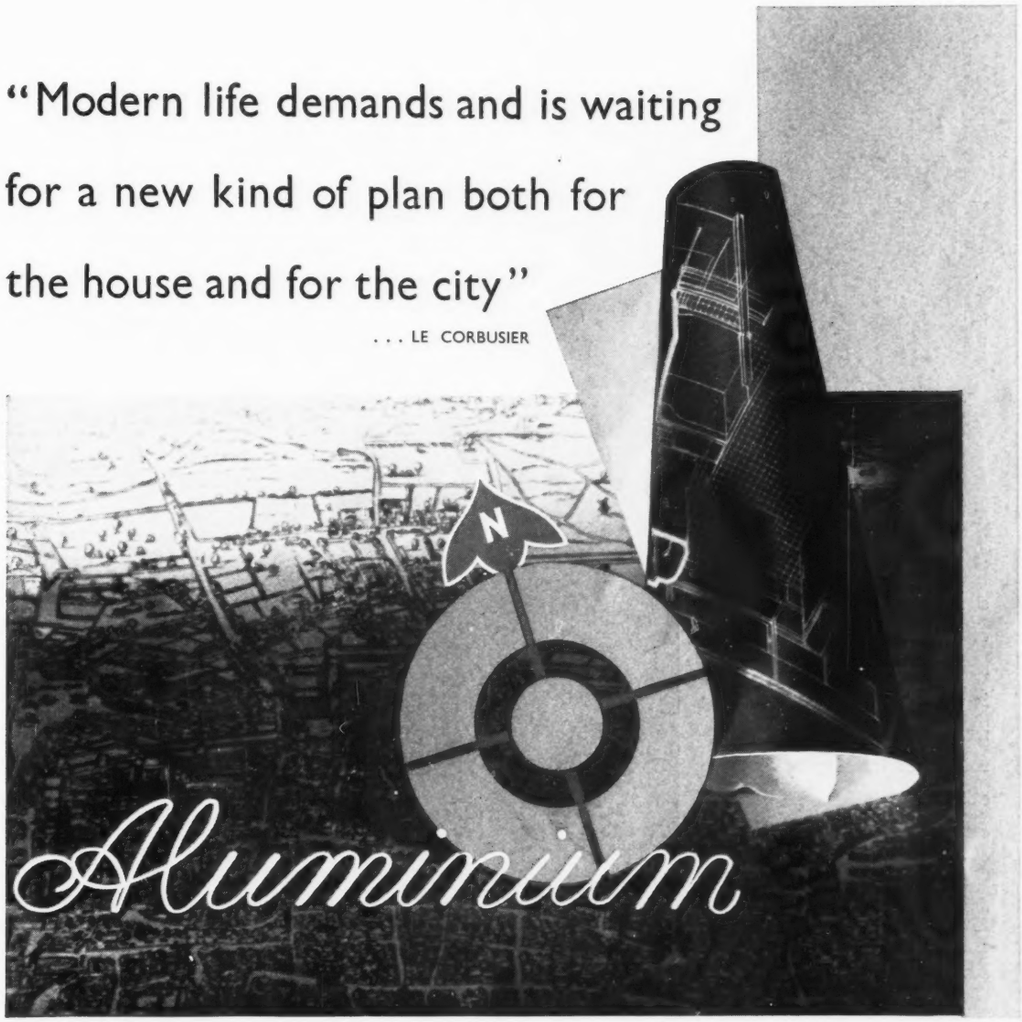

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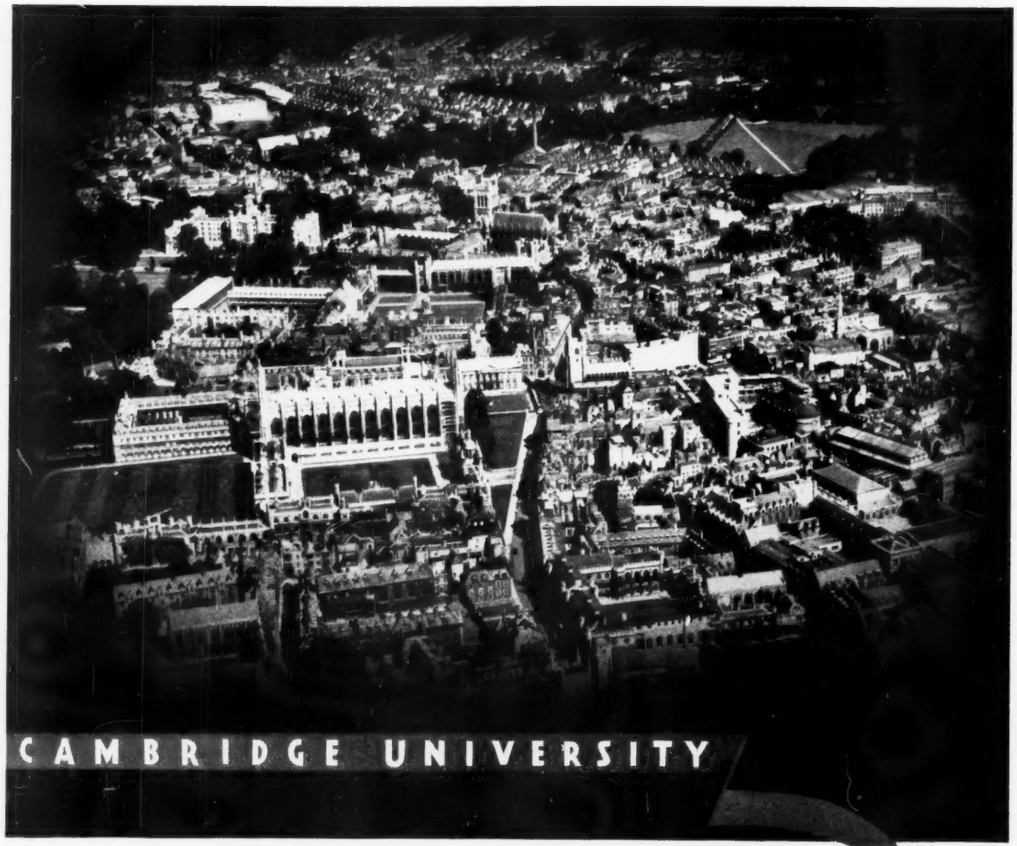

Aerofilms

At Cambridge, The Balfour Laboratory; Schools of Human Nutrition, Agriculture, Physiology and Botany; The Institute of Animal Pathology; Laboratory buildings for Mineralogy and Petrology; The Entomological Field Station; extensions to Clare, St. Catherines, St. Johns (College Library in 1928 and College extensions now in course of construction); Peterhouse College Baths; Queens College Squash Racquets Club—all have Kleine Reinforced Hollow Brick Floors.

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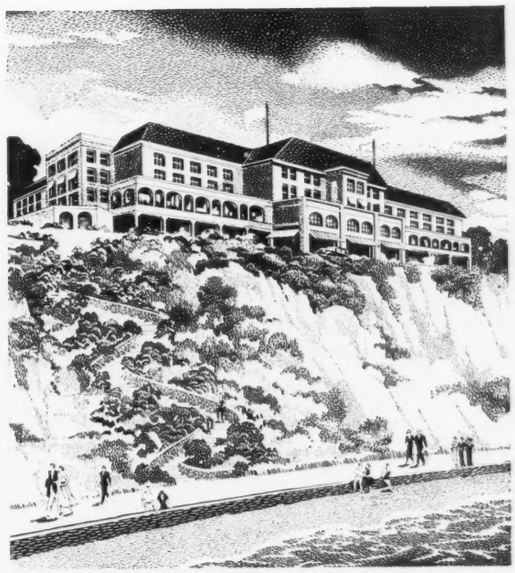

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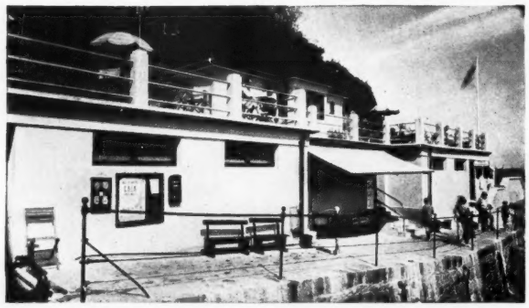

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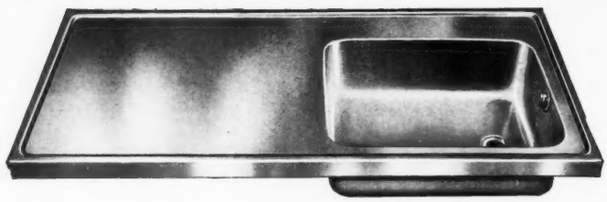

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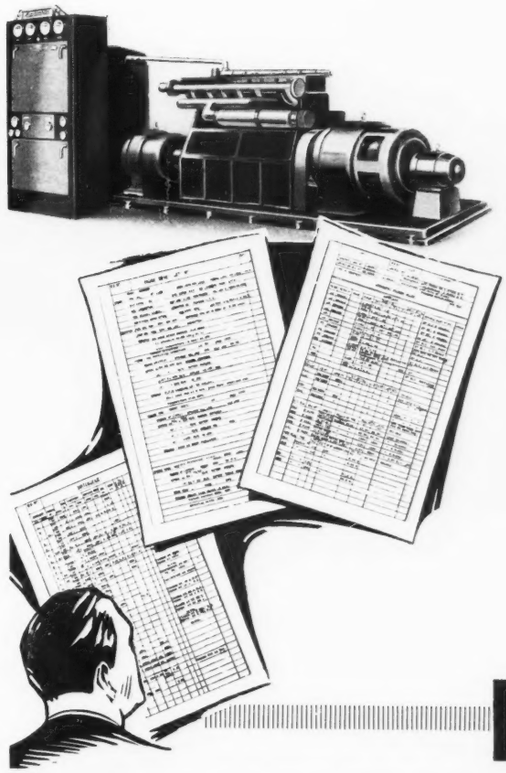

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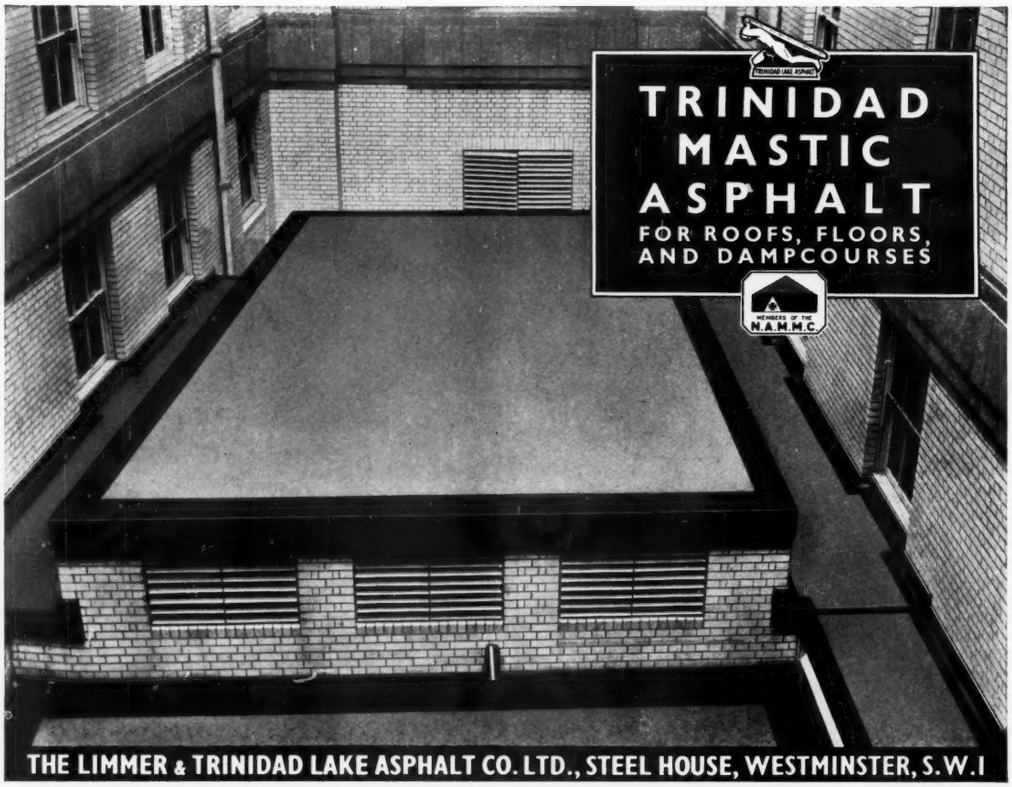

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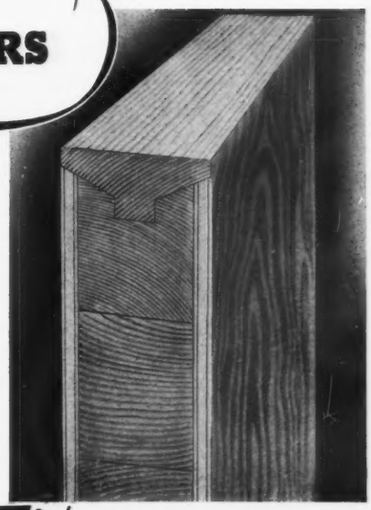

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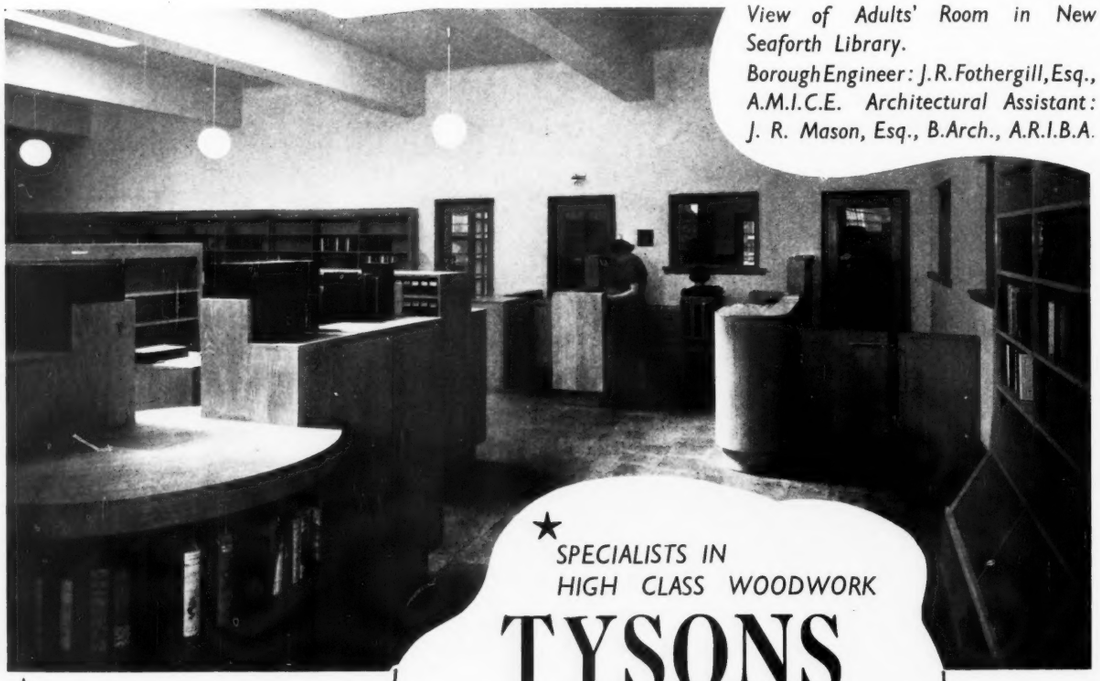

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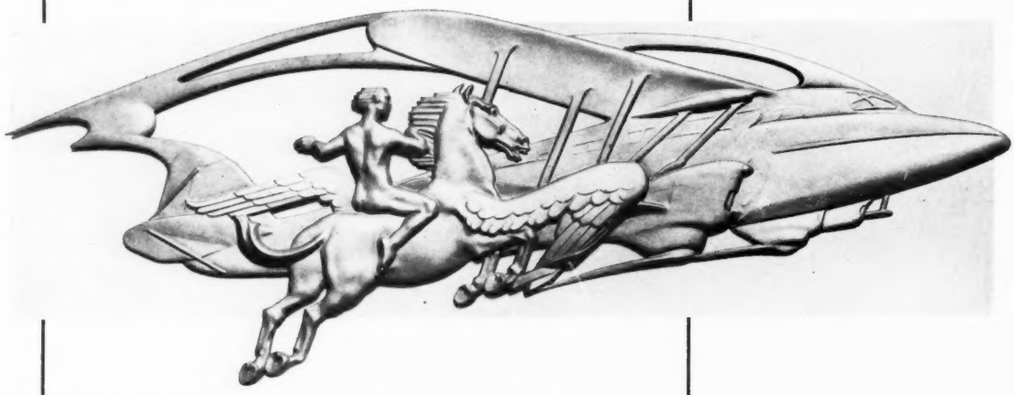

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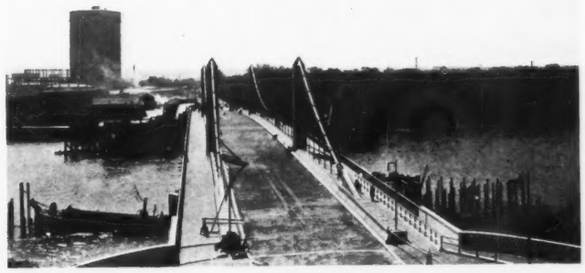

Architects:
G. Topham Forrest, F.R.I.B.A.
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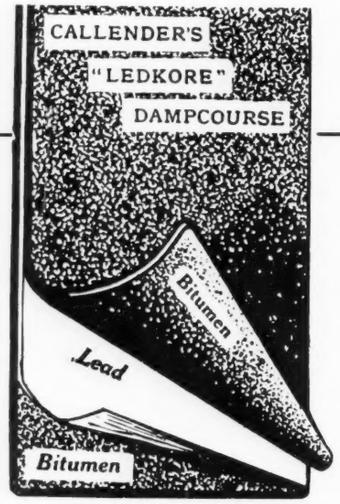

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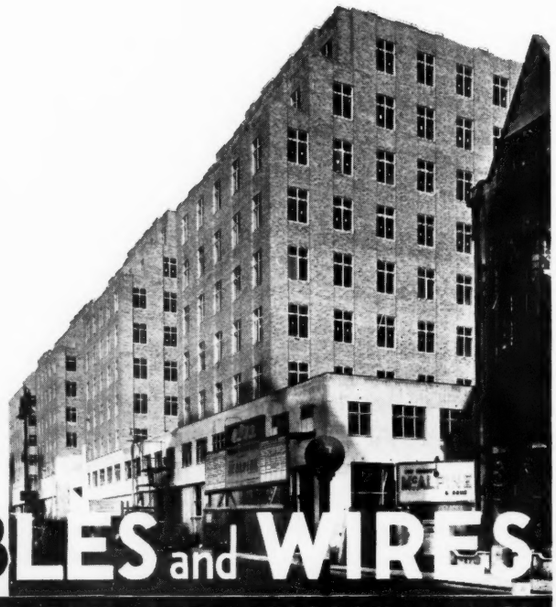

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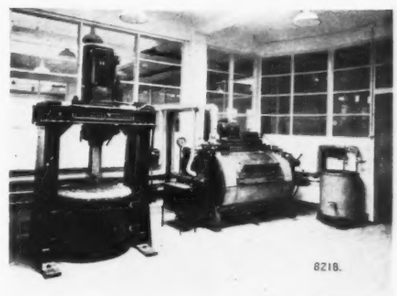

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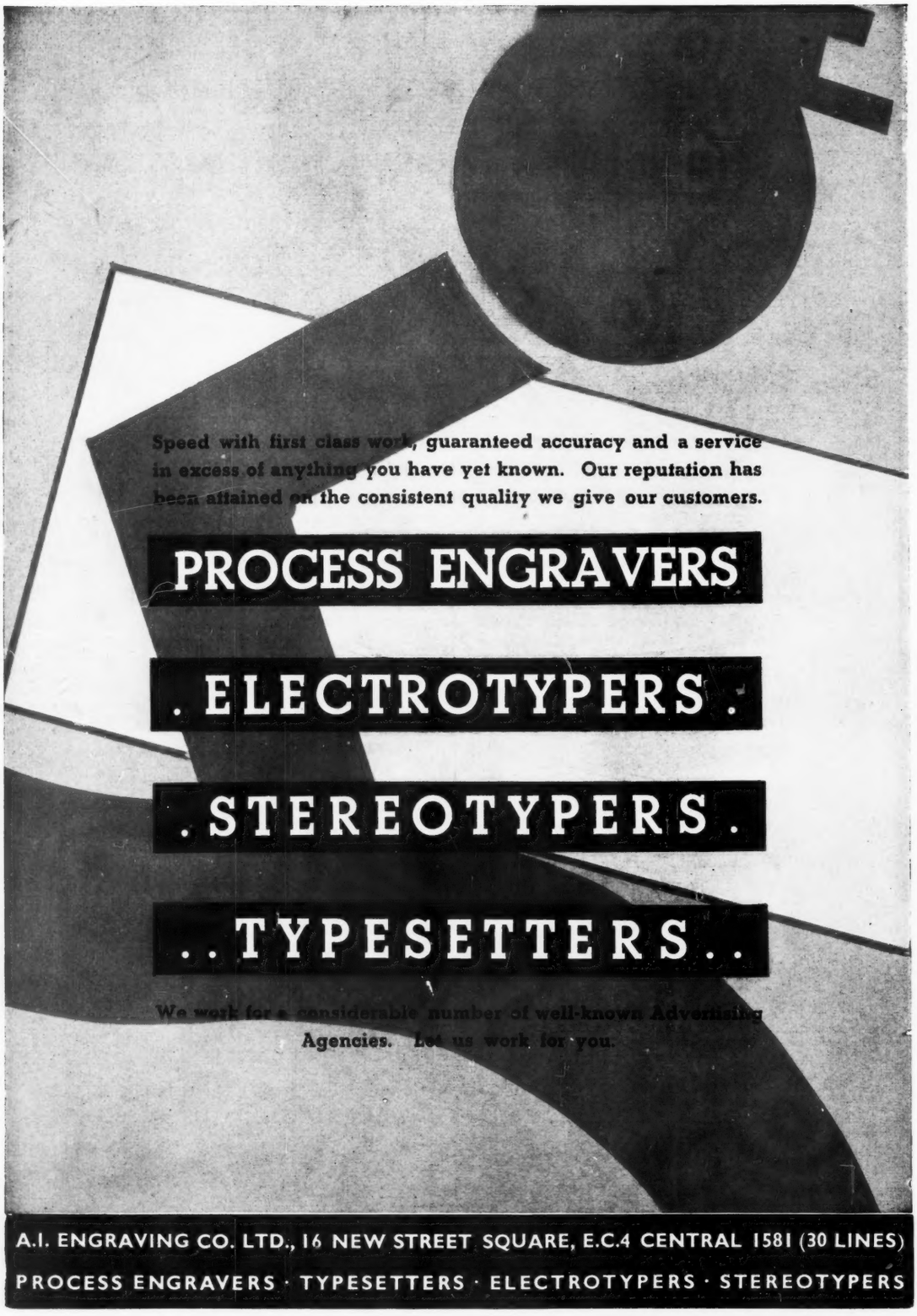
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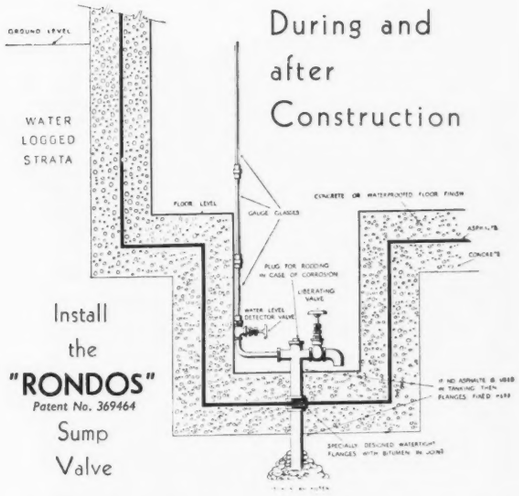

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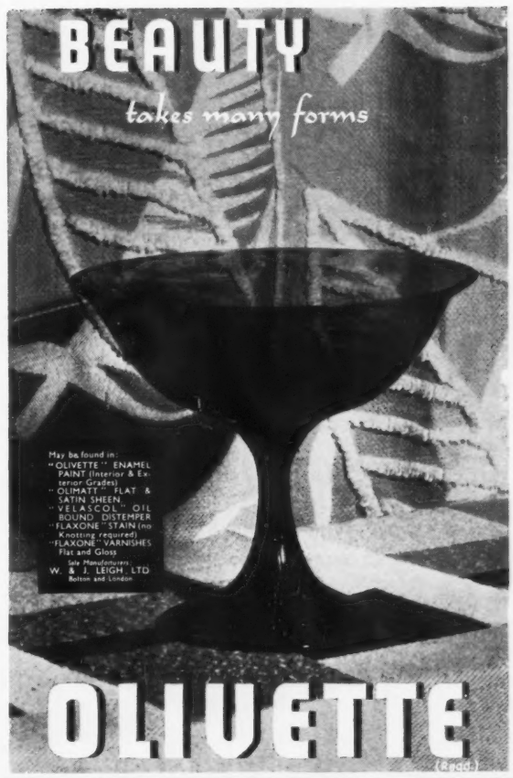

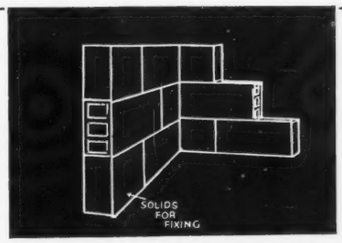

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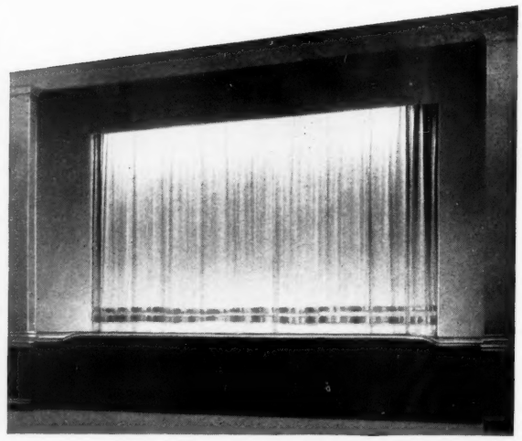

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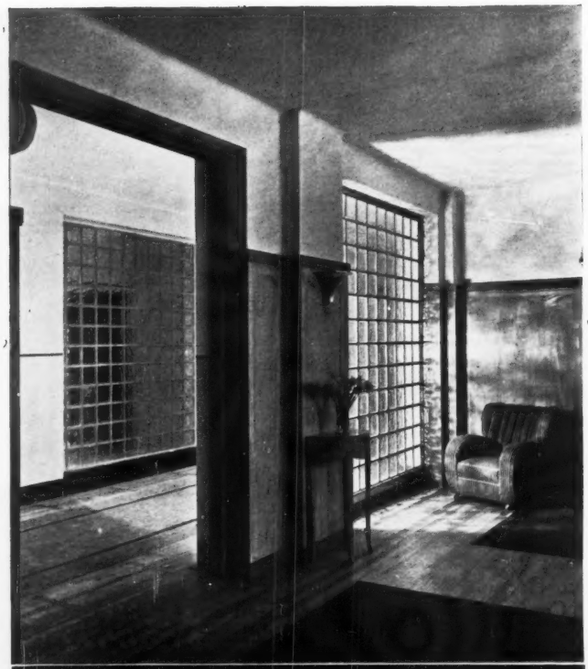

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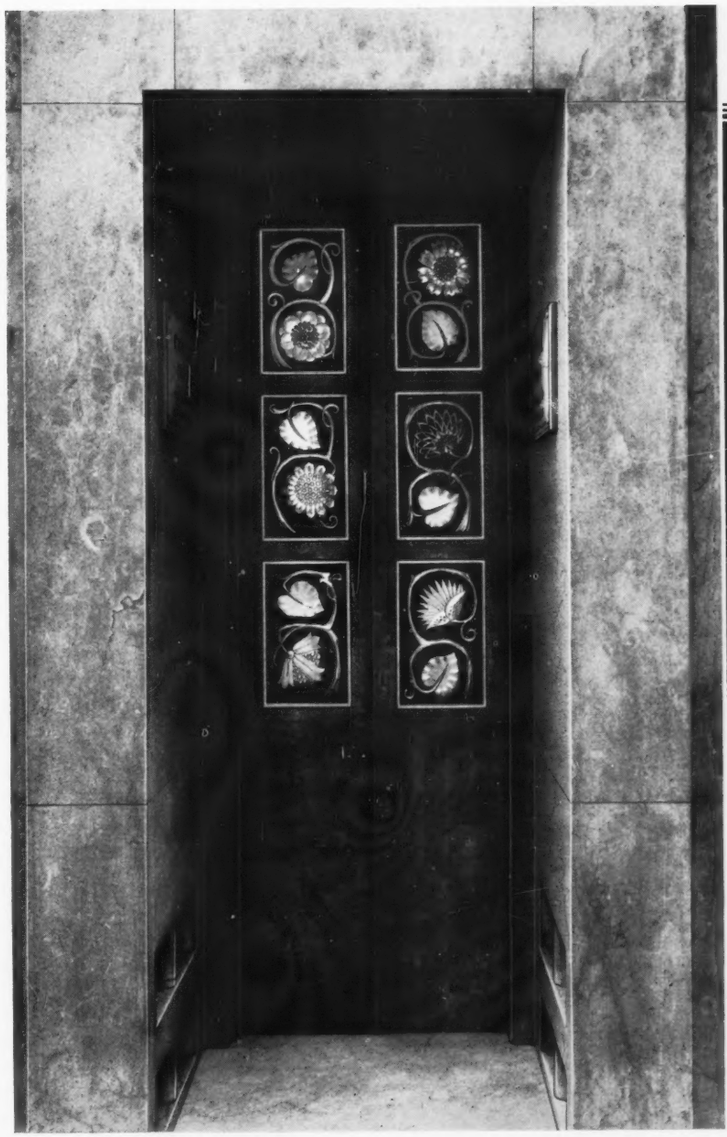

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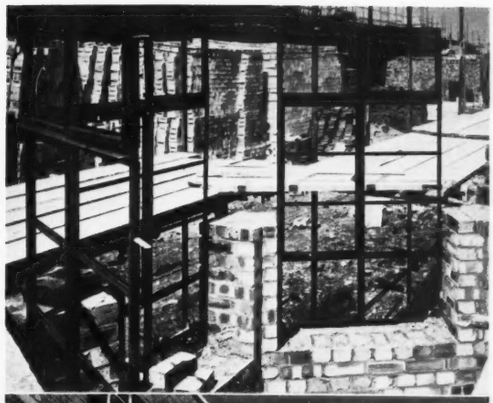

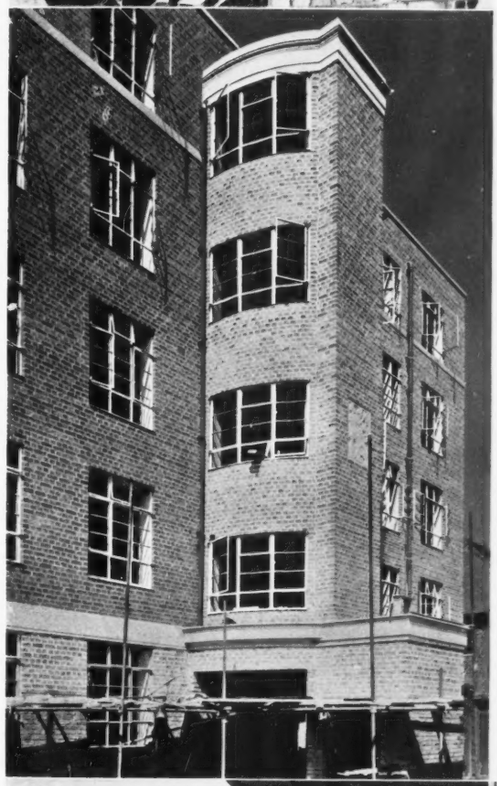

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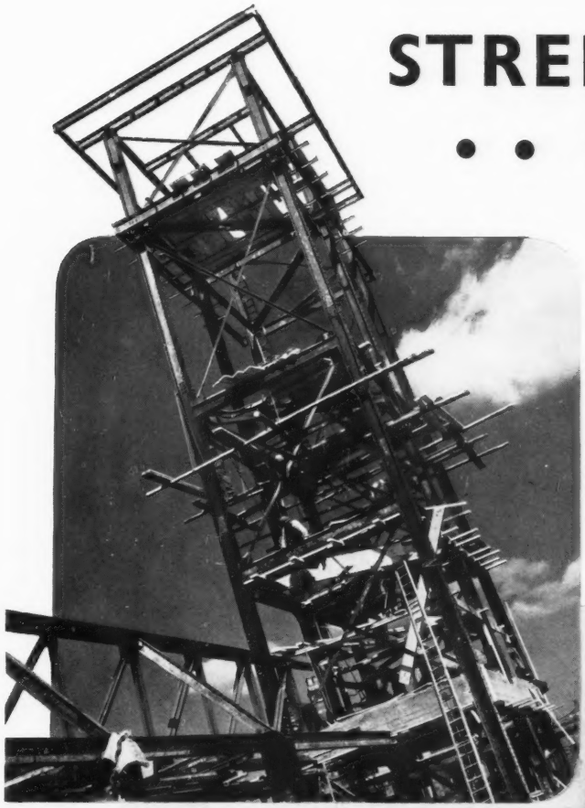

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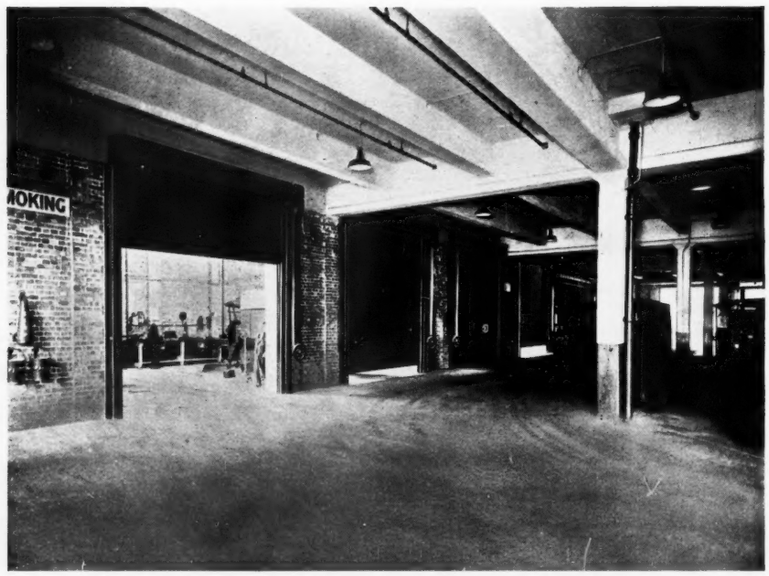

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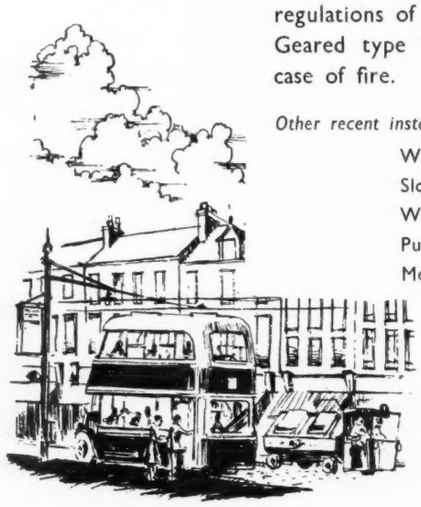

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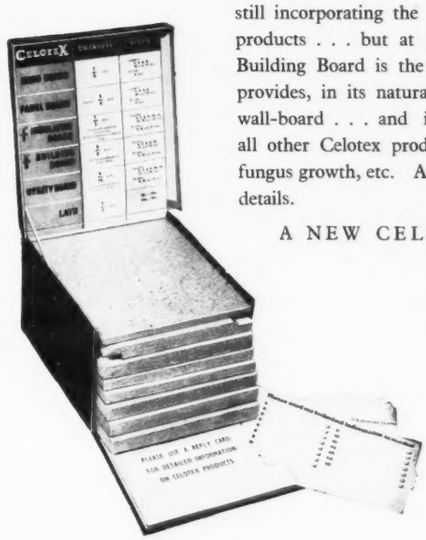

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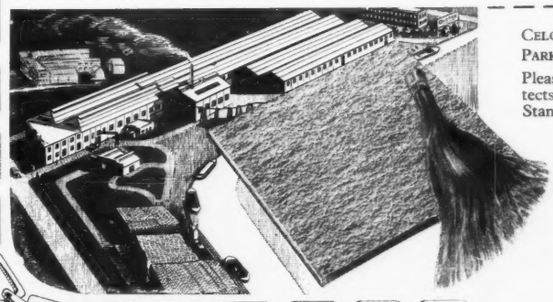

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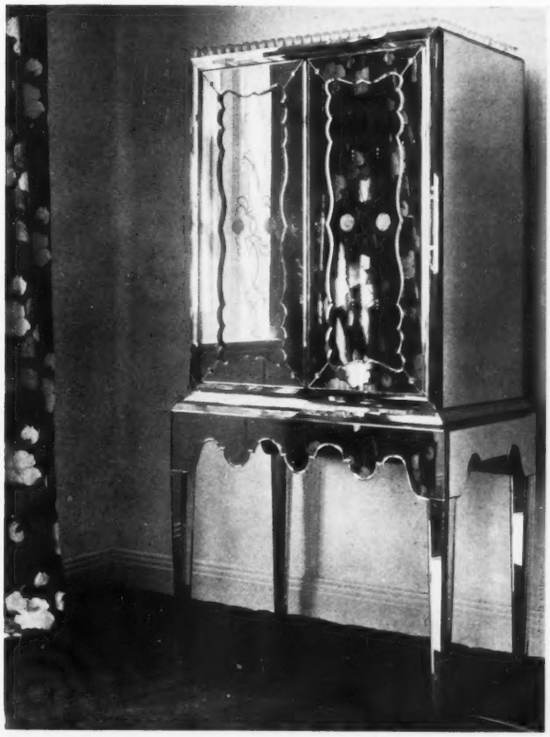

This cocktail cabinet is covered with engraved mirror glass and has crystal balls ornamenting the top.

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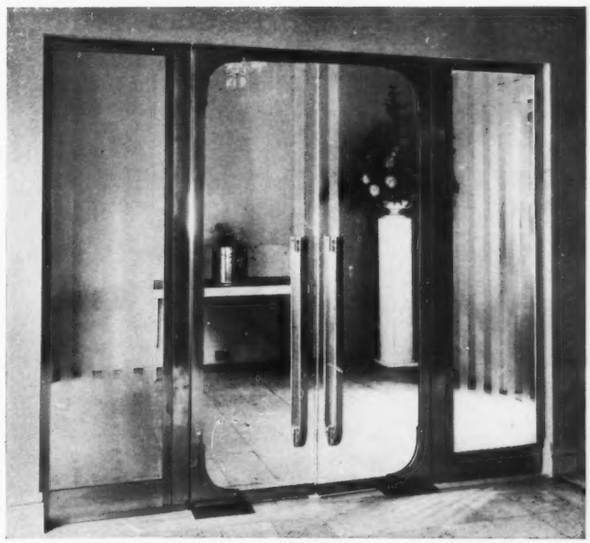

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Architect: Gerald Lacoste, A.R.I.B.A.
The glass is ¾" plate with stippled lines.

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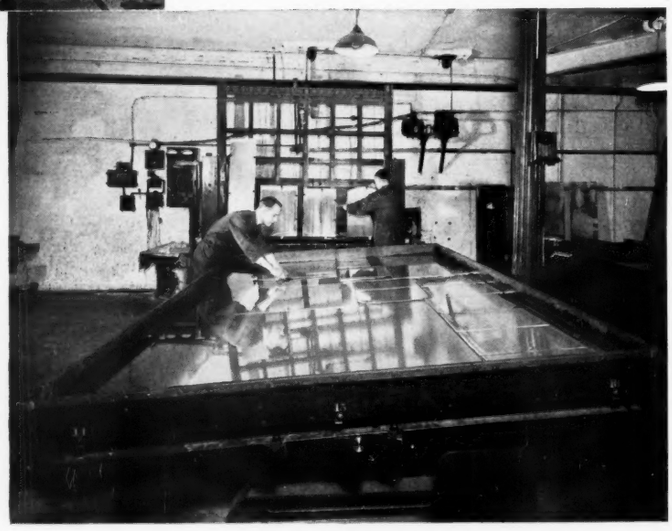
Above: Decorative Mirrors at the Gaumont, Haymarket, W.
Architect: W. E. Trent, F.R.I.B.A. F.S.I.



A rocking table, operated electrically, in which the silver solution flows from side to side, ensuring an even coating right up to the edges of the glass. The racks of the copper backing plant, with silvered plates ready to be immersed, are seen in the background.

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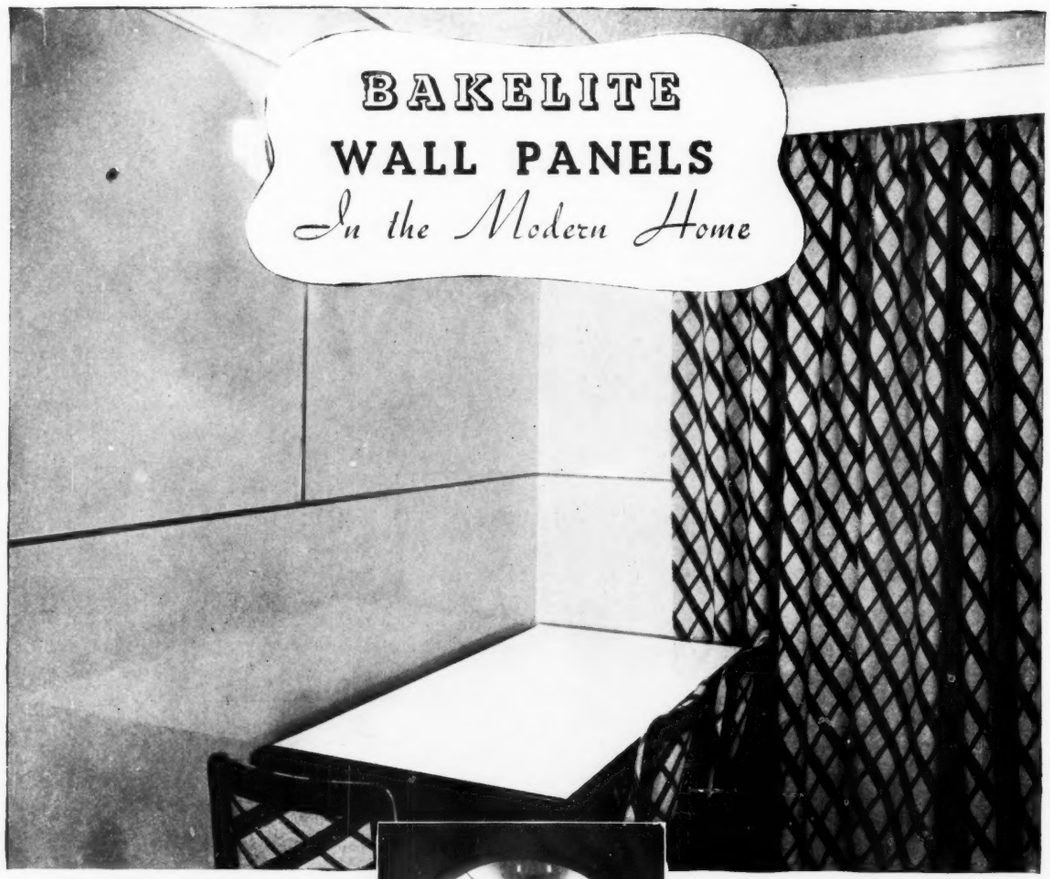

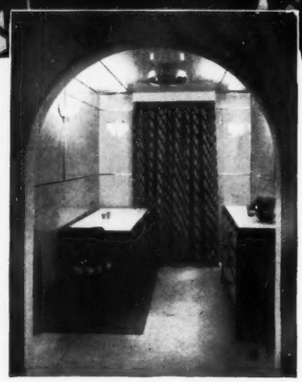

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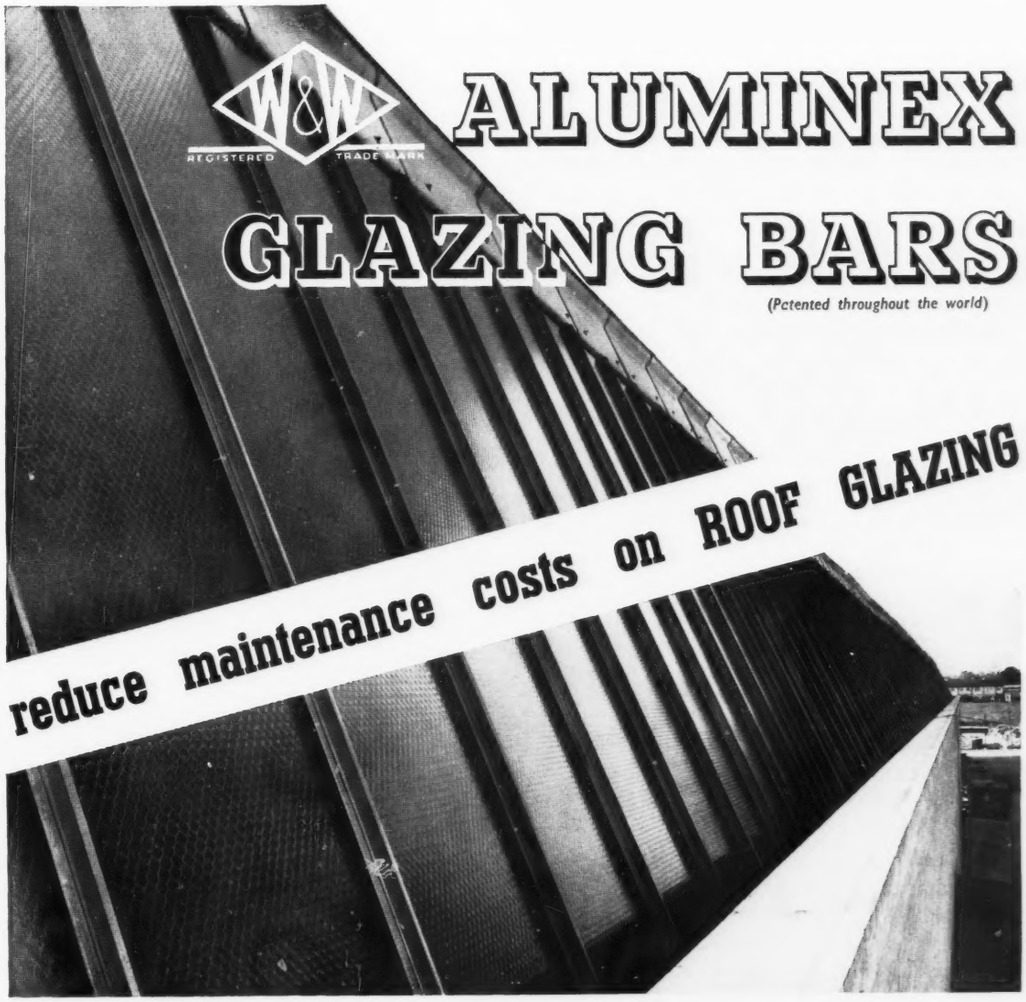

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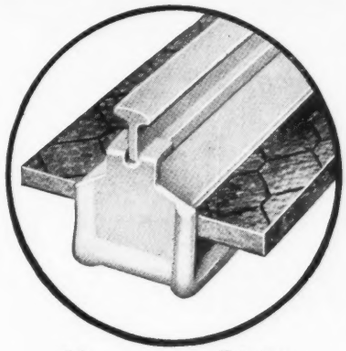

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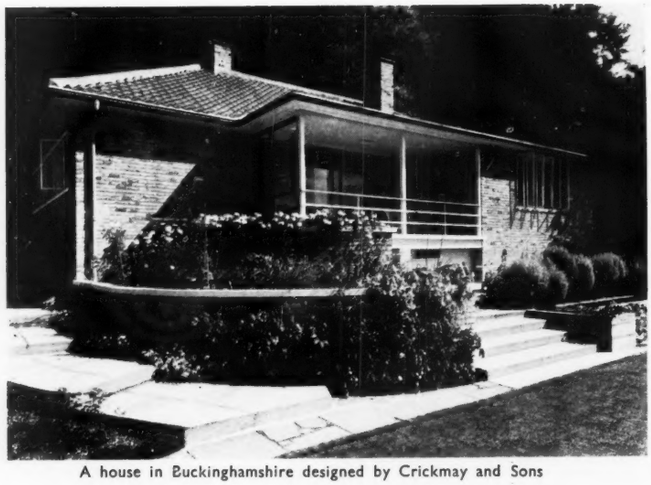

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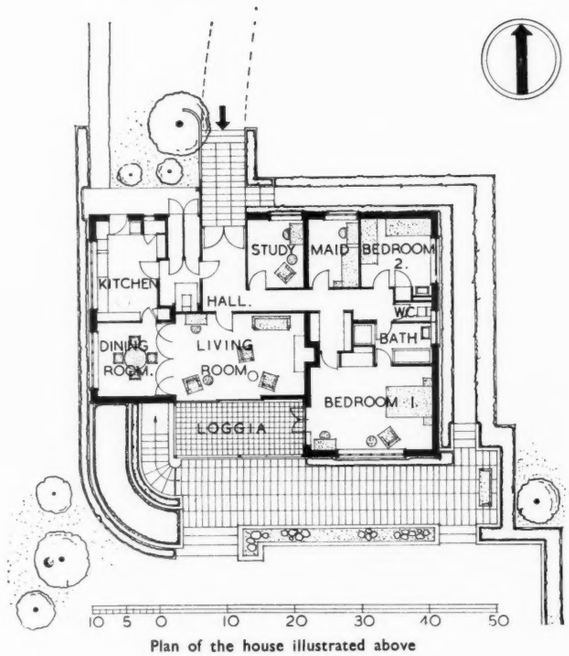

Plan of the house illustrated above

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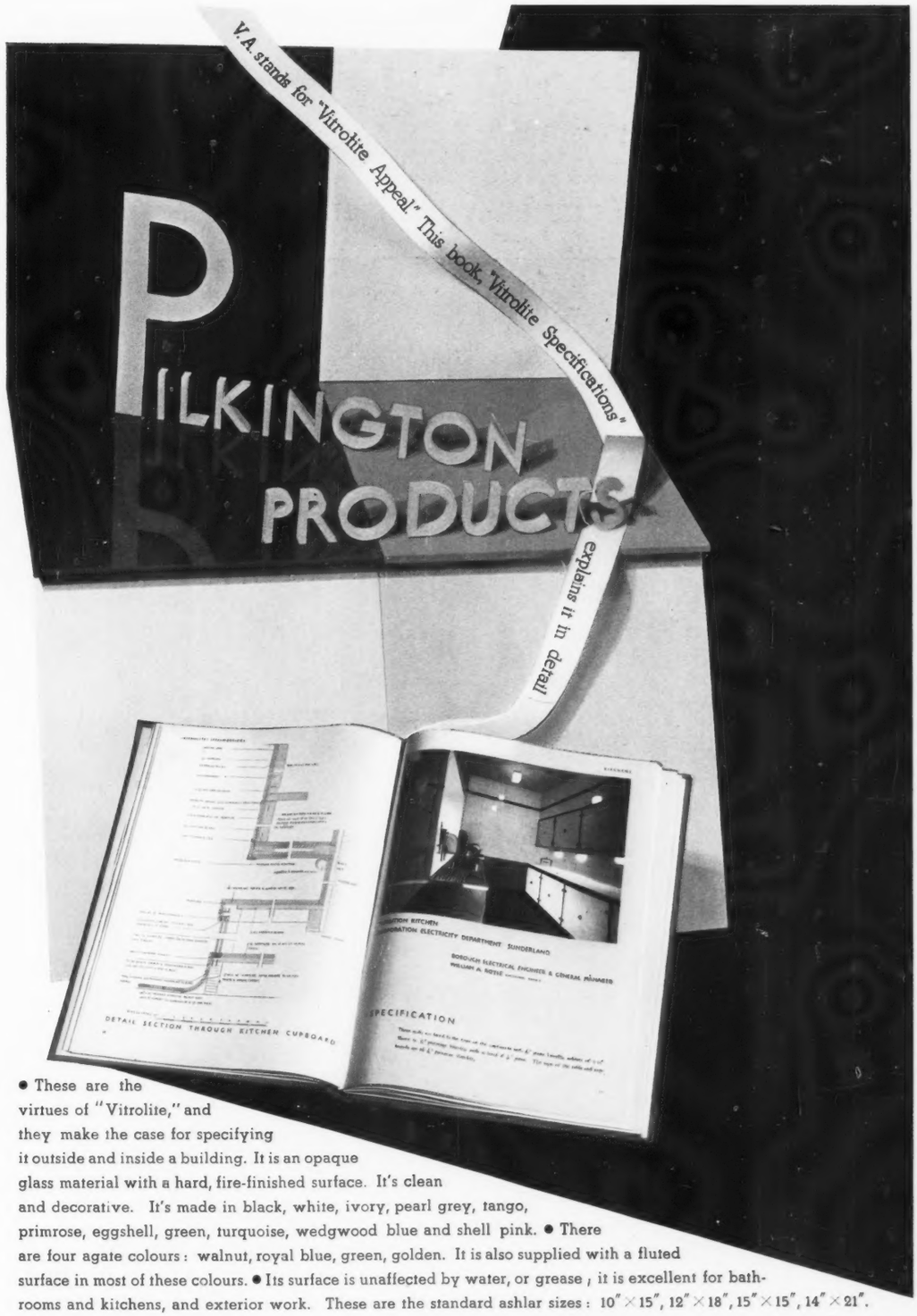

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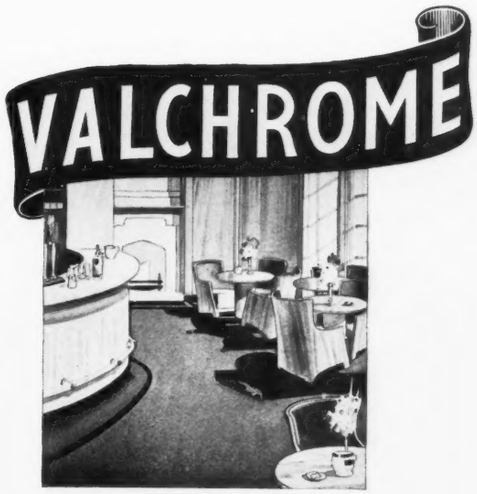

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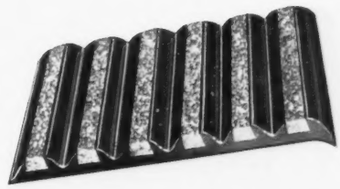

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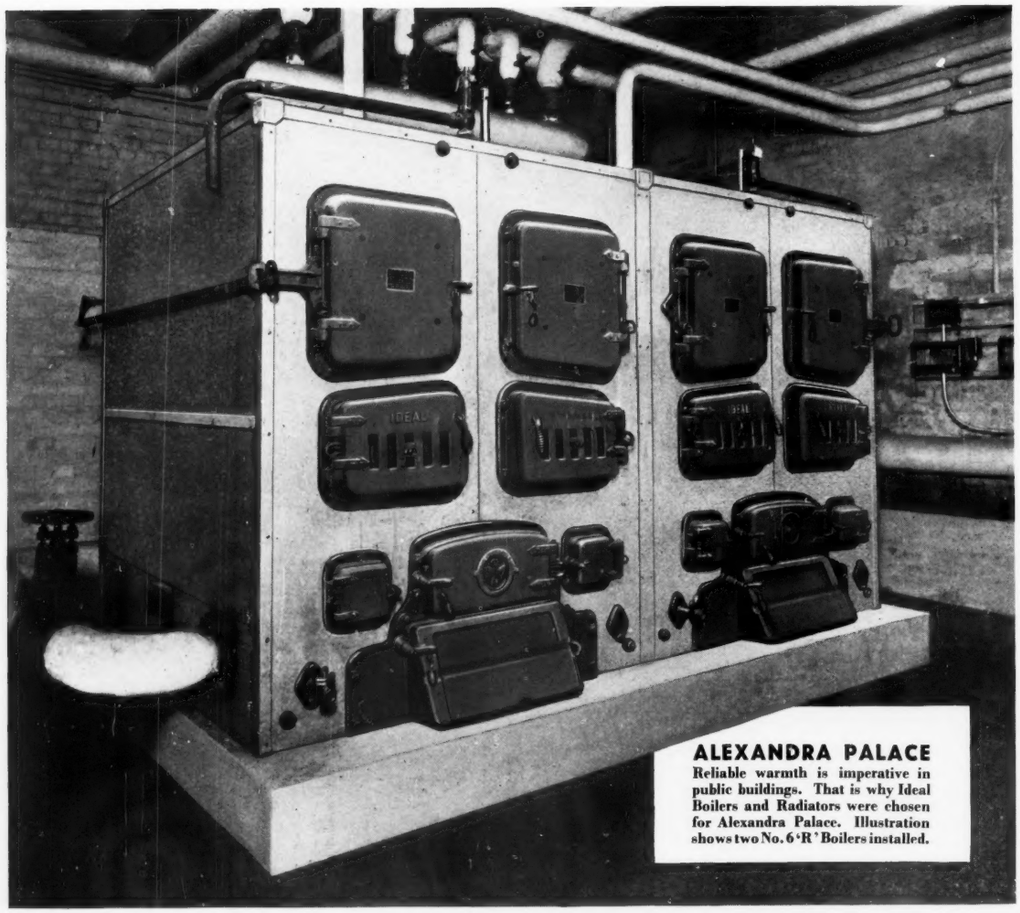

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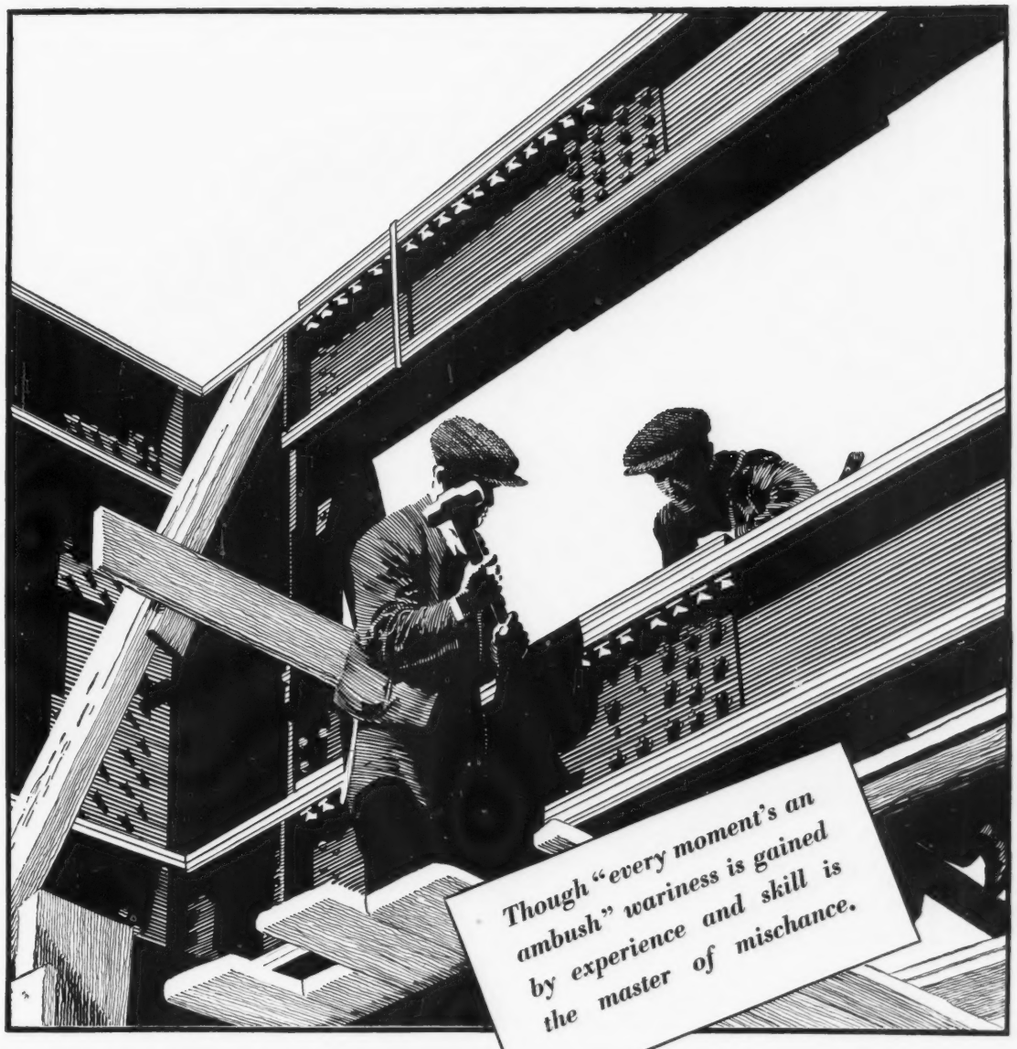

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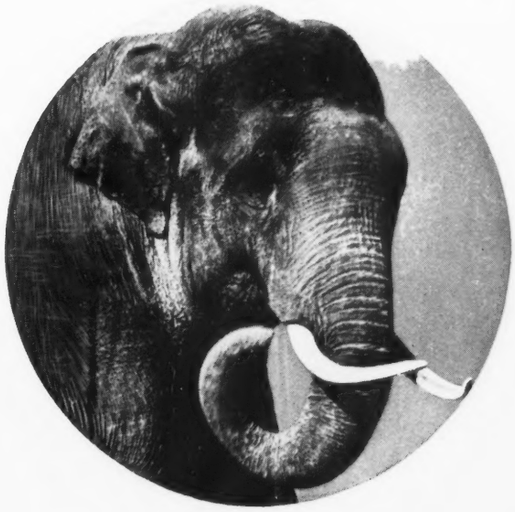

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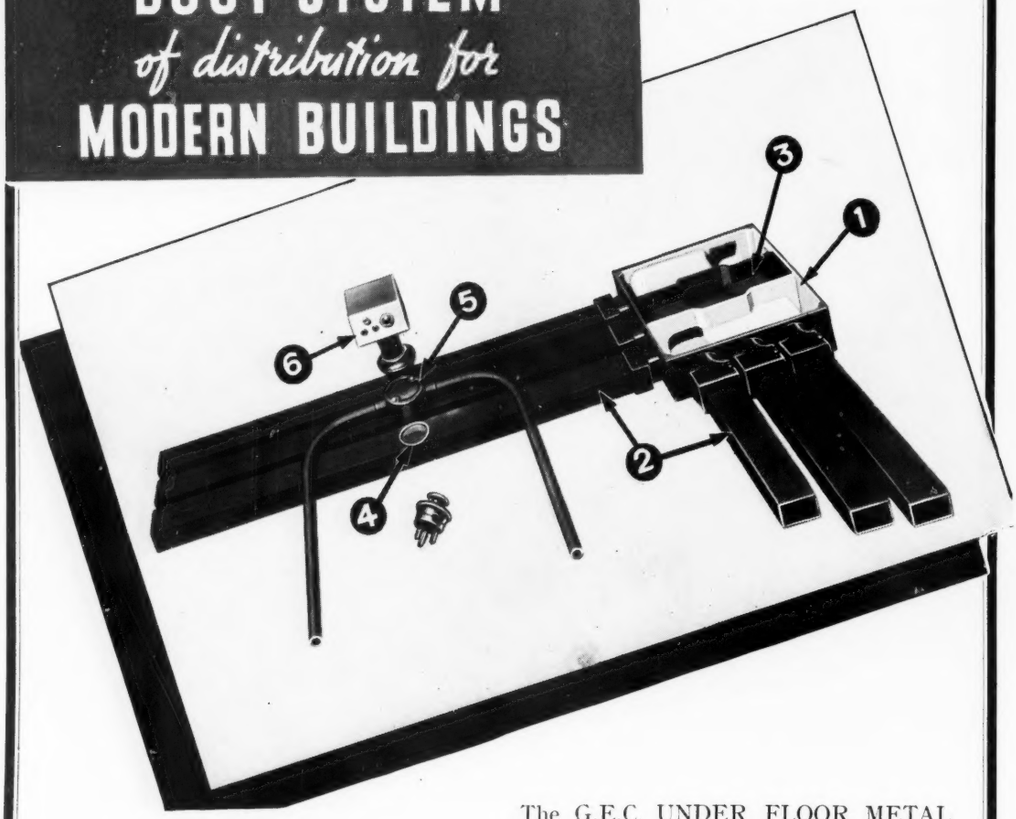

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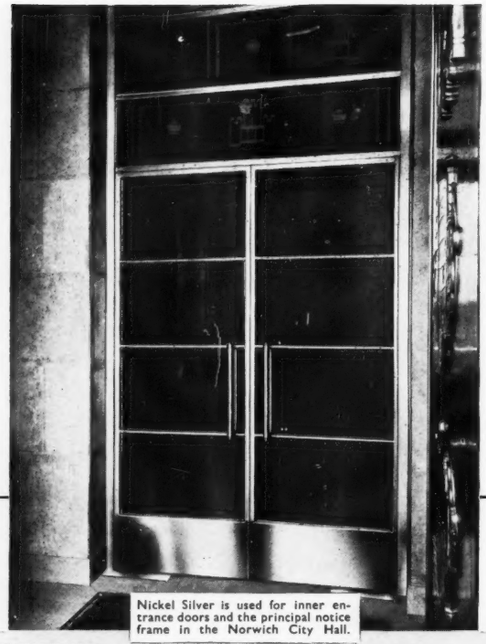

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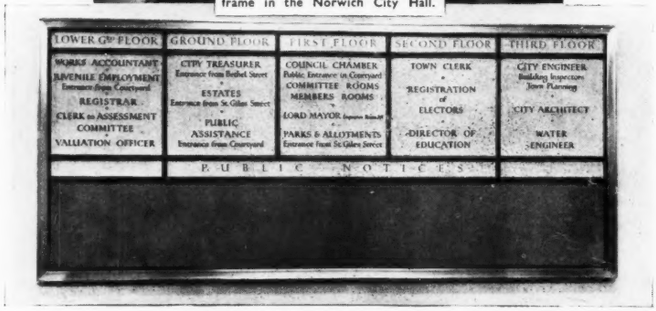

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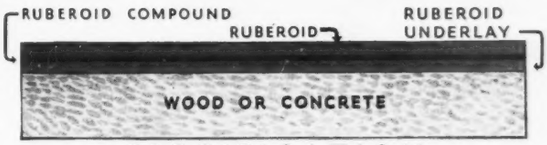

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It is, of course, advisable that the moisture content of Teak for interior work be regulated to suit the purpose required. For instance, for joinery in a centrally-heated building, the moisture content should not exceed 12 per cent.

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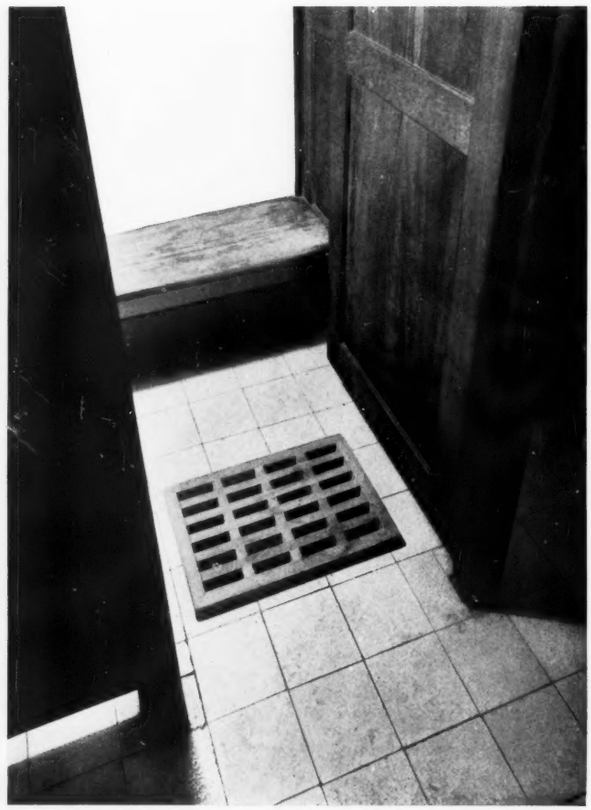

Teak—Tectona grandis

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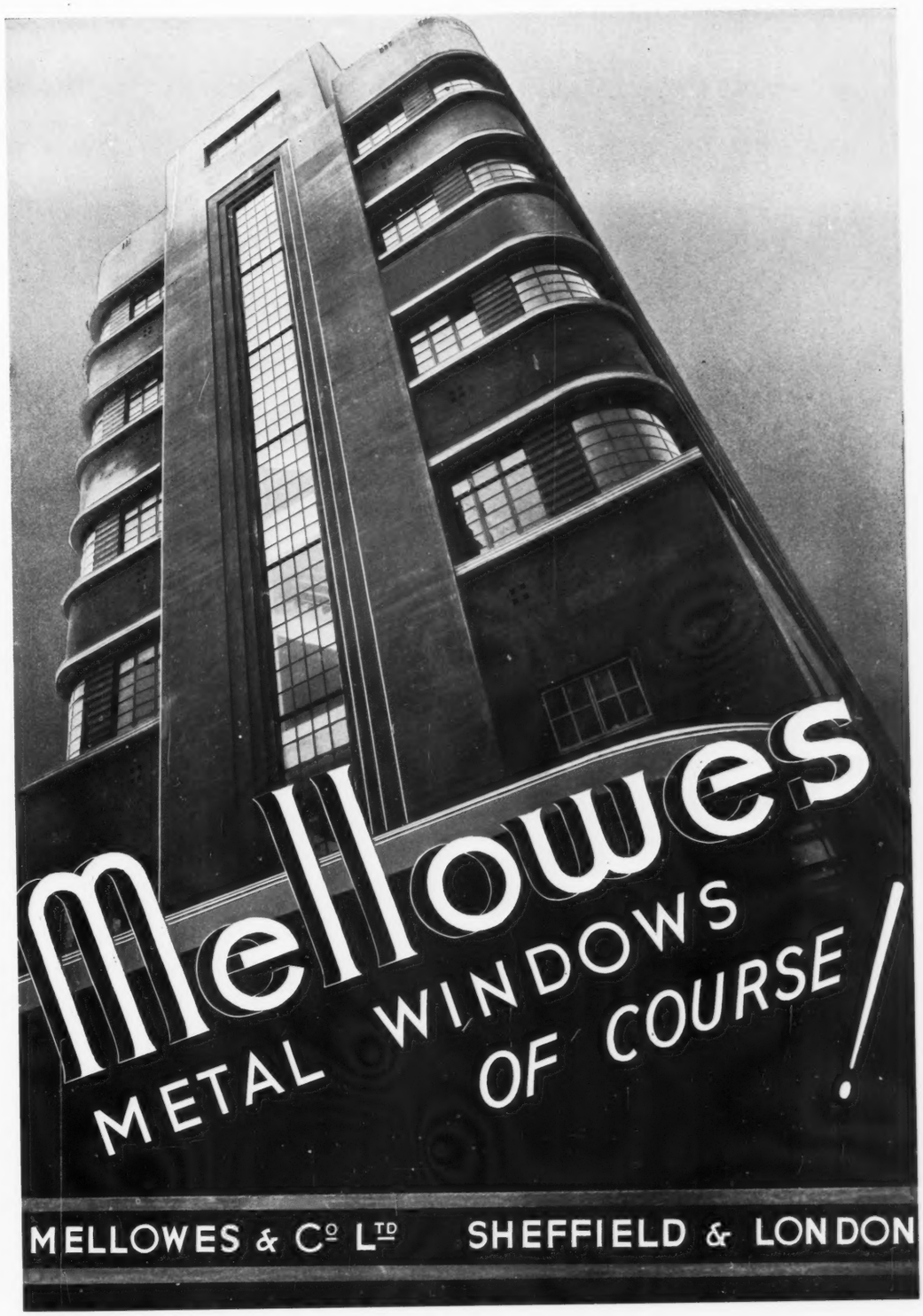
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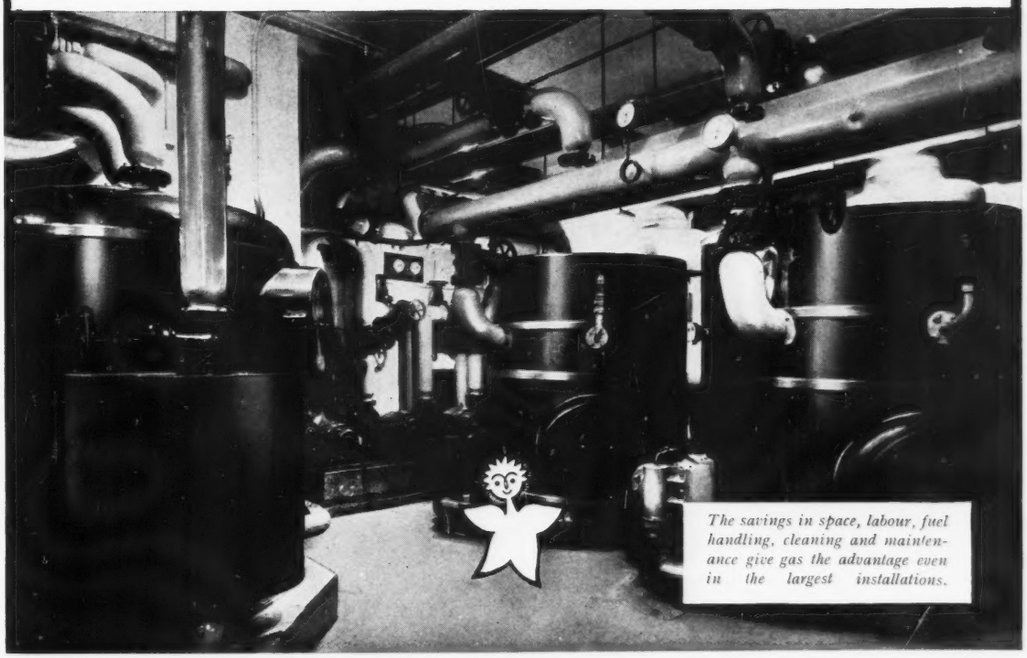

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Installation by Richard Crittall & Co. Ltd.

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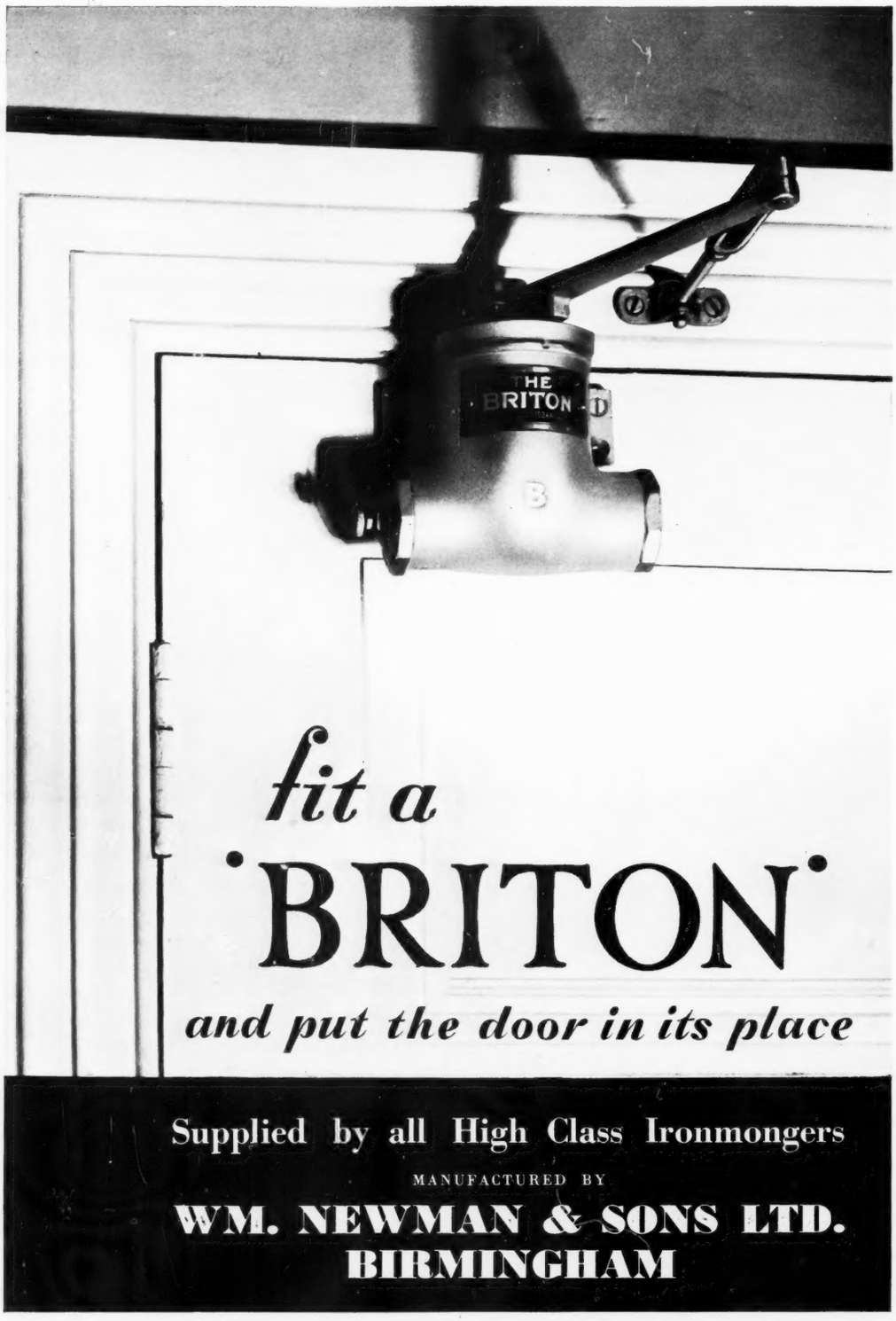

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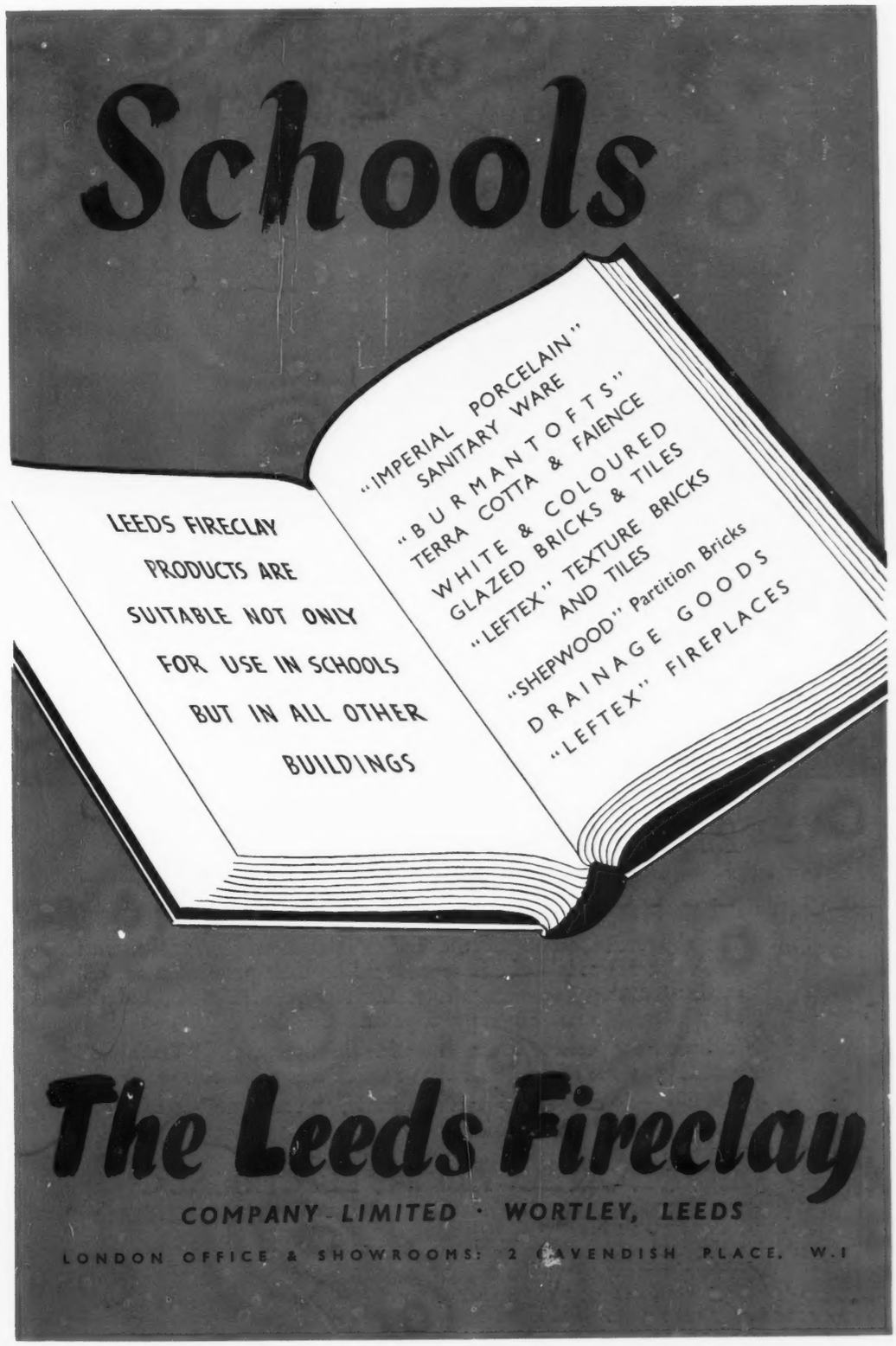
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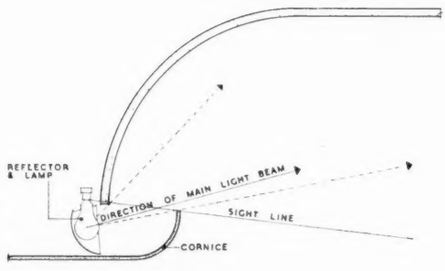

A sectional detail showing the method of fixing the reflectors in relation to the plasterwork.

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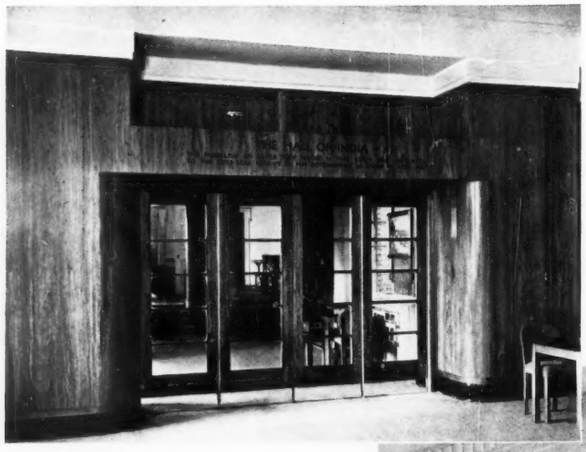

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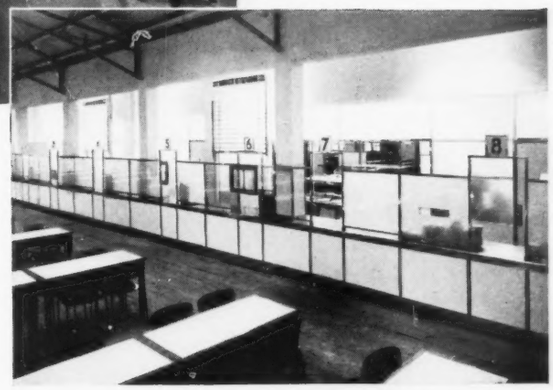

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Mr. Raymond's work is, of course, well known in this country, and includes hospitals, schools, office buildings, club-houses, factories, embassies, housing schemes, etc. Among the subjects dealt with in this book are walls, floors, roofs, ceilings, windows, stairways in concrete and wood, towers, altars, and all manner of domestic details including living-room, dining-room, bedroom, bathroom, kitchen, fireplaces, furniture, etc.

The book contains 120 pages size 12 ins. by 9 ins., and is attractively bound by the Spirax process in a cover of natural coloured hand woven grass fibre.

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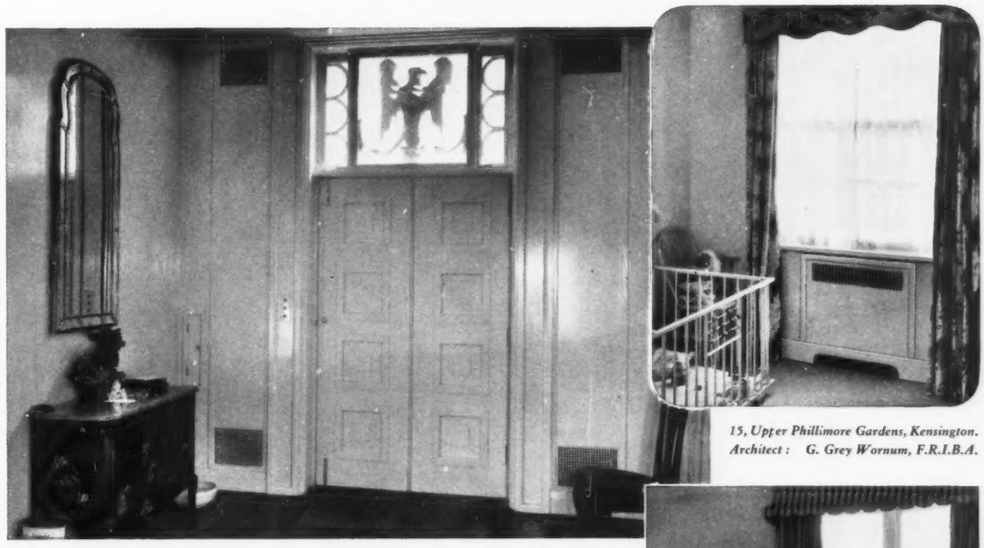

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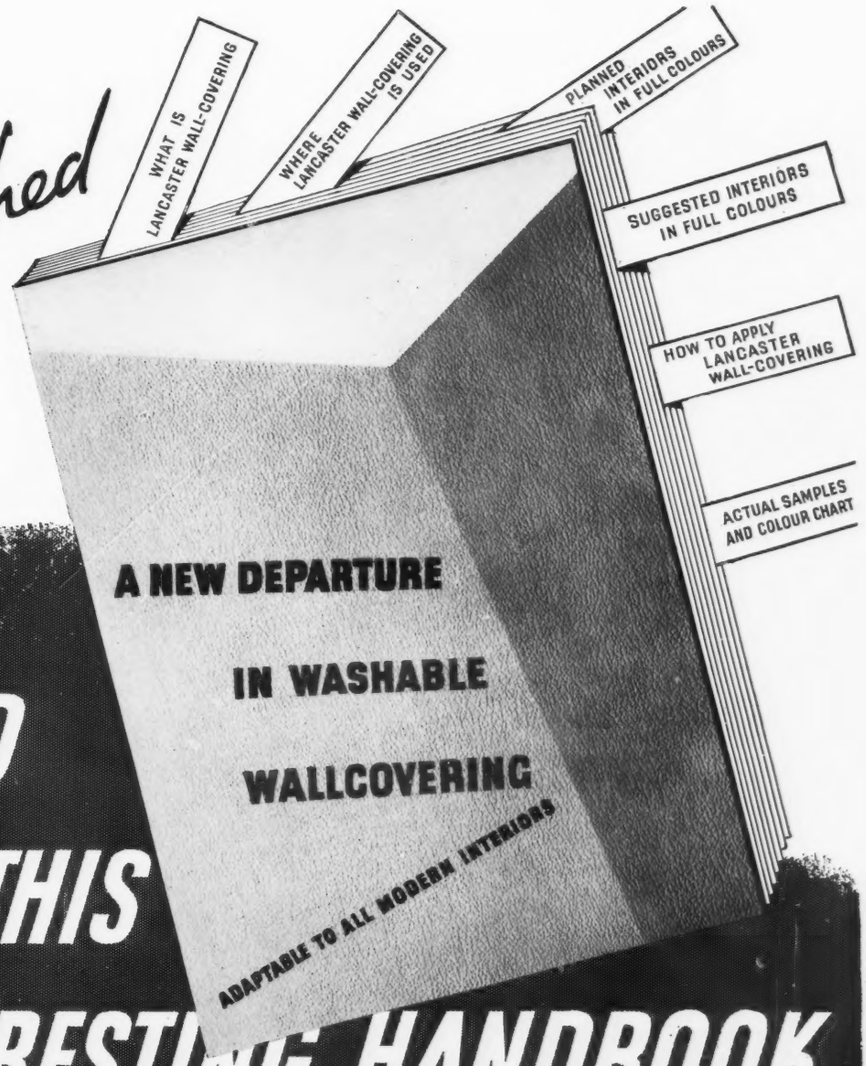
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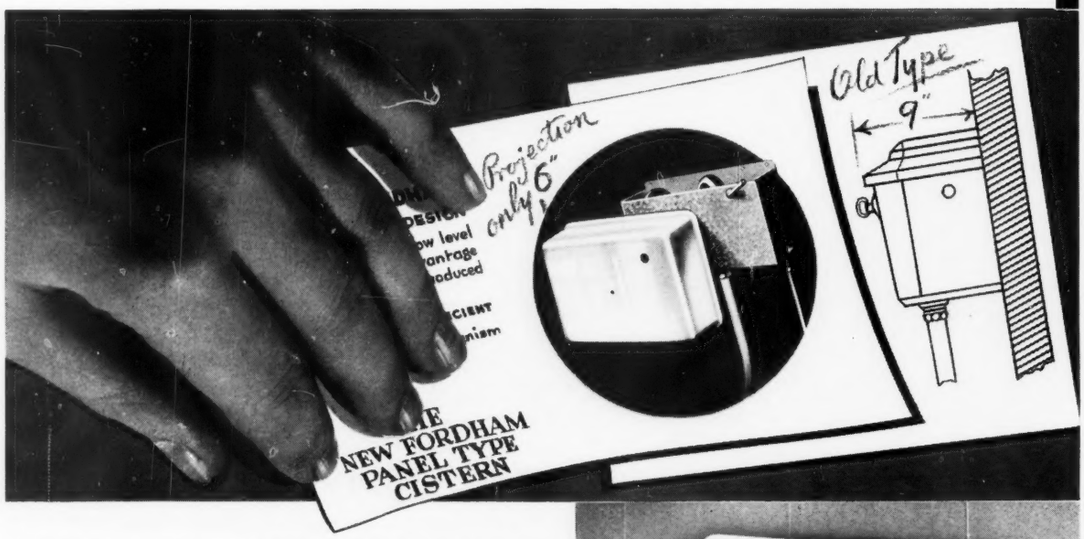

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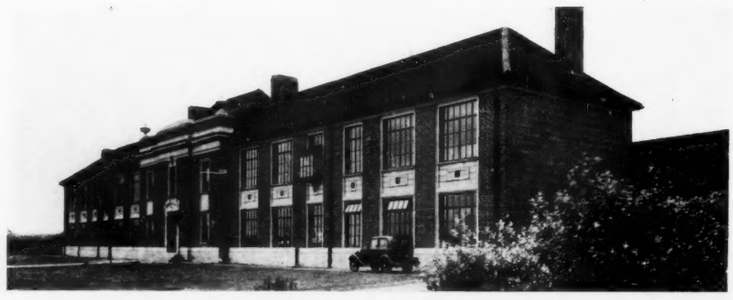

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Finally, the authors' own scheme for the Borough of Finsbury is fully discussed and illustrated. This scheme gives protection for the whole population in the Borough against bombs up to one ton in weight by means of large shelters holding 7,000 to 12,000 people, equipped with air-conditioning plant, electric lighting, lavatories, warden posts, decontamination chambers, etc. The financial calculations for the whole scheme are set out.

The size of the book is 10 ins. by 7½ ins. containing about 156 pages including 120 illustrations.

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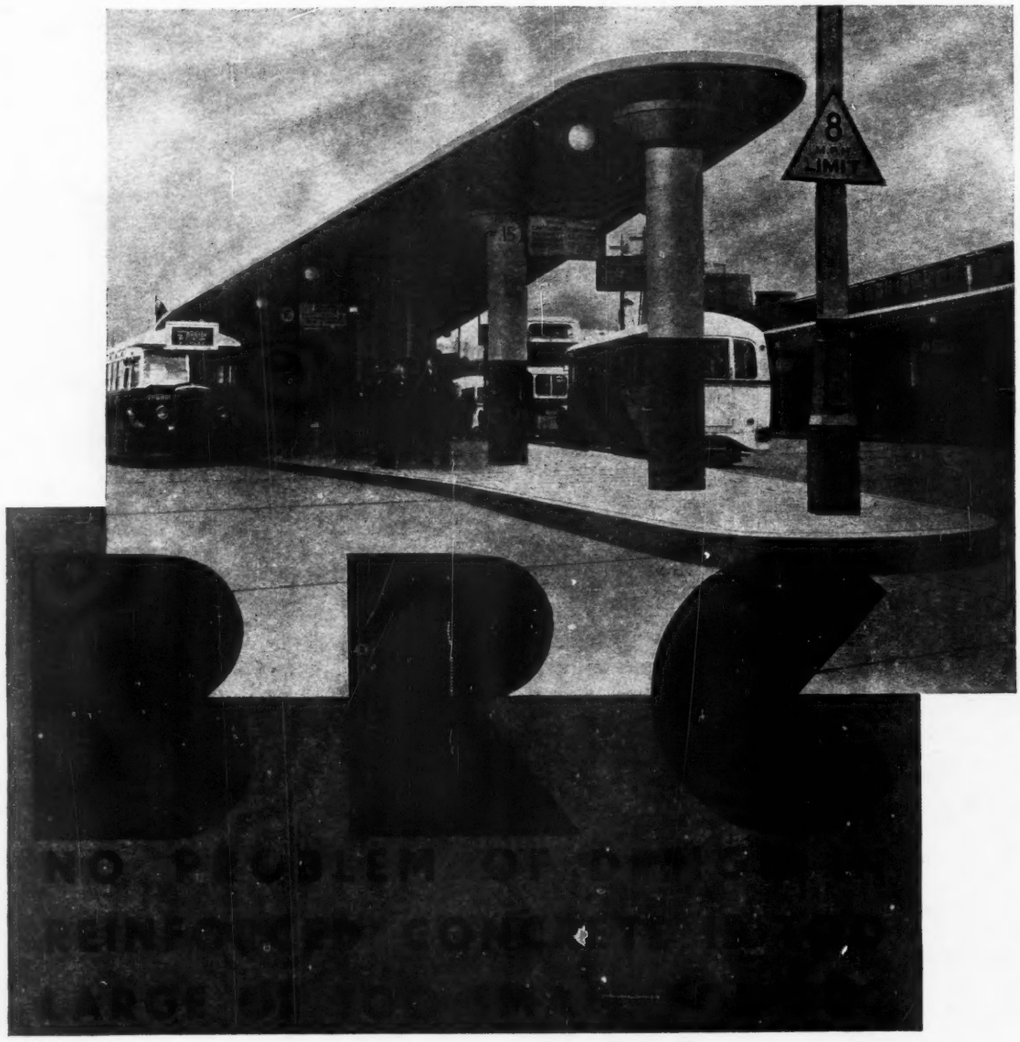

In this Bus Station at Barnsley built for The Yorkshire Traction Company Ltd. under the direction of C. D. Quinn, Lic.R.I.B.A., BRC designs and reinforcement were used for the suspended floors, flat roofs and awnings.

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